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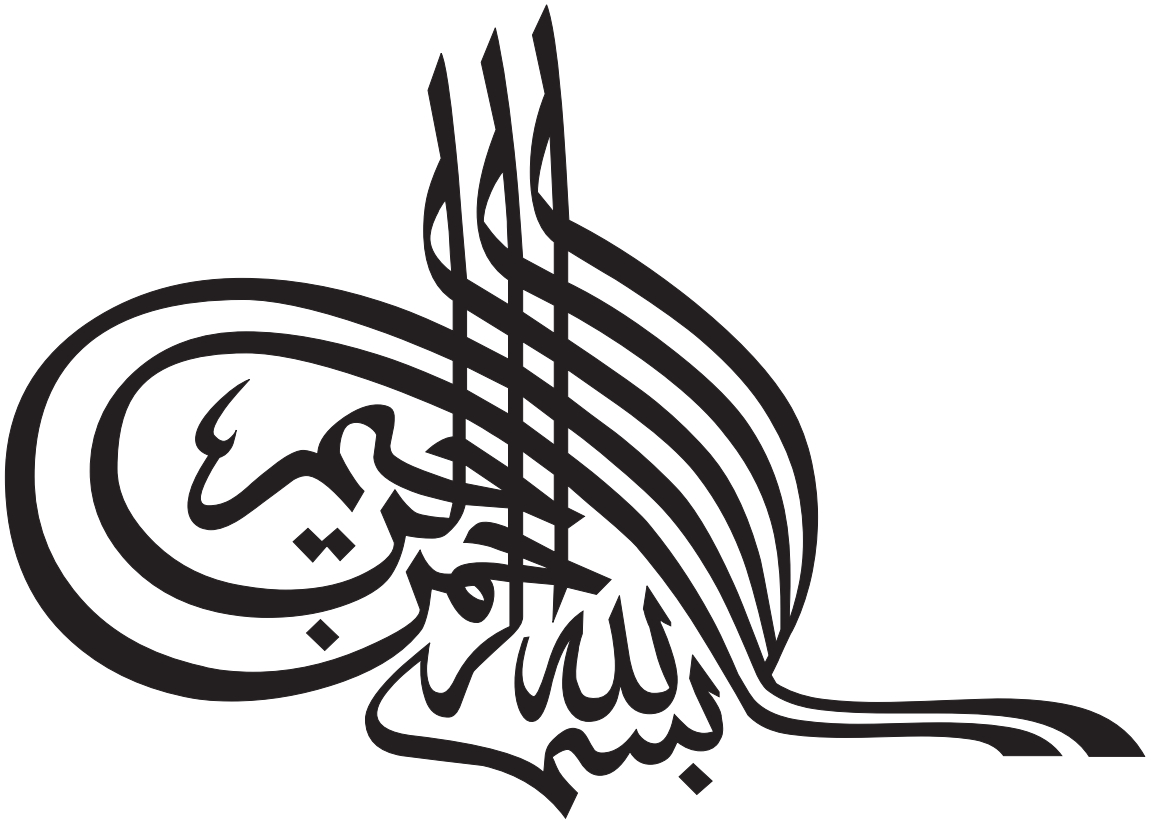

In the name of Allah, the most Beneficent, the most Merciful

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Decision Making in Dental Health Seeking Behaviors

Ulfat Bashir

The art and science of dentistry has progressed very rapidly since the introduction of the high-speed handpiece in the 1950s.[1] There has been a paradigm shift from paternalistic management of obvious problems to a medical model of dental care, which includes prevention and management of dental disease and prosthetic rehabilitation to restore normal oral function. Discovery of the relationship between oral health and systemic disease has raised awareness concerning the importance of oral health. Advancements in technology offer a variety of solutions for managing similar dental situations and it is incumbent upon each practitioner, as a member of an ethical profession, to educate patients about their appropriate treatment options, allowing them to make autonomous treatment choices that are in their best interest. It generally is understood that many treatment options are available for any given dental condition.[2] A definite decision-making process helps to determine the appropriateness of each treatment modality.

Dentistry is a moral profession, guided by normative principles. As a result; dentists are obligated to choose a course of treatment that allows them to be "caring and fair in their contact with patients."[3] Although increased commercialism may be difficult to avoid, patient autonomy should be the overwhelming decision. Members of the dental profession and the community at large expect dentists to act ethically, according to a balance of certain norms: non-malfeasance, beneficence, justice, veracity, and respect for patient autonomy.[4] The personal virtues of the dentist and the intrinsic values of the profession, the patient, and society must be considered when choosing appropriate treatment for any given situation.

It is pertinent to explore the elements of decision making in dental care, as patient participation is a field which has both ethical and legal implications in an increasingly user-focused, 'consumerist' health service, given that most dental care is paid for, in part or whole, by the patient. More importantly, by identifying the patient's dental preferences as active, passive or somewhere in-between, clinicians would obtain an insight not only into the outcome the patients has perceived but also in deciphering between different patient personalities.

Dentists need to help patient participation in the decision making by explaining the nature of the disease, treatment options, benefits of the options, time required in completing the treatment and most importantly the cost incurred in achieving the desired treatment.

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ORIGINAL ARTICLE

A Study to Evaluate Patient Preferences in the Decision Making of Dental Treatment

Faisal Moeen, Yawar Hayat Khan, Uzma Hasan

ABSTRACT

Objective: The purpose of this study was to explore patient preferences in their dental treatment decision making and establish their role as active, passive or collaborative.
Study Design: Questionnaire based cross-sectional.
Place and Duration of Study: Department of Prosthodontics and the Executive private clinics of the Islamic International Dental College, Hospital from the 1st of February till the 30th of March 2012.
Materials and Methods: A convenience sample of 80 patients, 40 recruited from the Department of Prosthodontics and 40 from the executive clinics at the Islamic International Dental College were interviewed and their preferences for participation in treatment decision making were established using a measurement tool designed to elicit decision-making preferences. Patient preferences for participation in treatment decision making were established using a simplistic modification of the Control Preference Scale (CPS) tool.
Results: This study found that 45% clinic patients perceived active/semi-active roles in treatment decision making, 42.5% chose passive/semi-passive roles. 90% patients interviewed at the Department of Prosthodontics preferred passive/semi-passive roles. Over all, out of 80 patients, 53 chose the passive/semi-passive roles.
Conclusion: Patients presenting at the private clinics prefer being actively involved in their treatments, having said that, majority of them choose to get treatment from private clinics because they expect better services and have more trust in their doctors.

Key Words: *Control Preference Scale (CPS), Treatment decision making, Patient preferences.*

Introduction

The demise of "single best treatments", rise in multi-faceted chronic illnesses, variations in the provision of services, increasing costs and increasing availability of newer and easily accessible information are all cited as reasons contributing to patients getting actively involved in the decision making of their treatment plans. The shift in paternalistic decision-making where physicians play a more dominant role to one that actively involves patient involvement has been documented to be on the rise.[1] Studies on patient-doctor relationship along with elements addressing satisfaction have also been documented.[2,3,4] No research so far has been conducted on assessing the participation preferences of any Pakistani population in their dental decision making. It is pertinent to explore the elements of decision making in dental care, as patient participation is a field which has both ethical and legal implications in an increasingly user-focused, 'consumerist' health service, given that most dental care is paid for, in part or whole, by the patient. More importantly, by identifying the patient's dental preferences as active, passive or somewhere in-between, clinicians would obtain an insight not only into the outcome the patients have perceived but also in deciphering between different patient personalities.

Although, a number of methods have been used to examine patients' decisional role preferences, a modification of the Control Preferences Scale would be used in this observational study.[5] This simple

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methodology involves presenting individuals with five options, each with a written statement. These options describe increasing levels of patient involvement in treatment decision-making, from the patient completely relinquishing control to clinicians, through to the patient maintaining complete control of treatment decision-making. Patients are asked to choose one most preferred and one least preferred role from the five possible options which would determine whether the patient prefers a passive, collaborative or an active role.

The aims of this study are to firstly evaluate patient preferences in the decision making of their dental treatments and secondly to compare the dental decision making preferences between patients presenting at the Department of Prosthodontics and the private, executive clinics both situated at the Islamic International Dental College, Islamabad.

Materials and Methods

Patients were eligible for inclusion if they presented at the department of Prosthodontics and the private clinics of the teaching hospital for elective replacement of missing teeth. They needed to be above the age of 18. Patients were recruited consecutively and studied prospectively between February and March of 2012. The protocol of the study was approved by the ethics committee of the Islamic International Dental College and all patients gave informed consent.

A convenience sample of 80 patients was recruited for this study from the Prosthodontic Department (40) and the executive clinics (40) of the Islamic International Dental College. Each patient was explained the objectives of the study and assured confidentiality of their responses. No patient declined to be a part of this study and no patient was excluded.

Patient preferences for participation in decision making were established using the Control Preference Scale (CPS).[5] Although, the CPS enables identification of a role preference hierarchy for each respondent i.e. an order of preference from most preferred to least preferred role, our study for the sake of simplicity would not formulate a hierarchy of role preferences. Patients would simply make choices as to the most preferred and least preferred options. The cards would however be presented to the patients in a mixed, randomly arranged format.[6] This would eliminate the possible introduction of bias which exists if the fixed order approach is used. Once an option was selected, each patient was asked to give a rationale as to why that option was selected. The responses were recorded verbatim. By the end of the procedure, each patient would have chosen one option of the five and would be classed as either having an active, collaborative or passive decisional role preference.

Data from the Control Preferences Scale can be analyzed in a number of ways.[5] The simplest approach which is adopted here

Active role options	Collaborative role options	Passive role options
Card A I make the final selection about which treatment will receive.	**Card C** My doctor and I share responsibility for deciding which treatment is best for me.	**Card D** My doctor makes the final decision about which treatment will be used, but seriously considers my opinion.
Card B I make the final selection of my treatment after seriously considering my doctors opinion.		**Card E** I leave all decisions regarding my treatment to my Doctor.

Source: Chapple et al., 2003 (10)[6]

will be to extract the most and least preferred roles from each patient's response followed by a frequency count for each role. Non-numerical data relating to patients' rationales for choice of role preference were content analyzed to enable identification of themes.[7]

Results

All 80 patients appeared to understand the options presented in each of the five cards and their applicability to dental situations was confirmed. No further revision of the cards was necessary. Each participant understood the concept of choosing the most and the least preferred options applicable to their treatments however some degree of explanation was required in a few situations.

At the hospital setting, 21 patients out of the 40 (52.5%) chose card 'E' as the most preferred choice, leaving all decisions regarding their treatment planning and execution to the dentists. 15 patients (37.5%) chose card 'D' as their most preferred choice which is again following a similar trend as card 'E' i.e. the doctor deciding what is in the best interest of the patient although in consult with the patient. Patients who were questioned at the executive clinics/private setting showed varied and mixed responses with choices leaning slightly more towards an active or a semi-active role. 6 patients (15%) chose option 'A', 12 (30%) chose option 'B', hence 45% patients accumulatively chose between options 'A' and 'B'.

Five patients (12.5%) chose option 'C', 15 (37.5%) chose option 'D' and finally only 2 patients (5%) chose option 'E' as their most preferred choices. 42.5% patients hence choose between options 'D' and 'E'.

The two extreme choices 'A' and 'E' were overwhelmingly the least preferred at both sites, with the fully active role (card A) being particular unpopular. From the 40 patients questioned at the dental college, 30 patients (75%) chose option 'A' and 10 (25%) chose option 'E' as their least preferred choices. 22 patients (73.3%) and 18 (45%) chose options 'A' and 'E' respectively from the clinics.

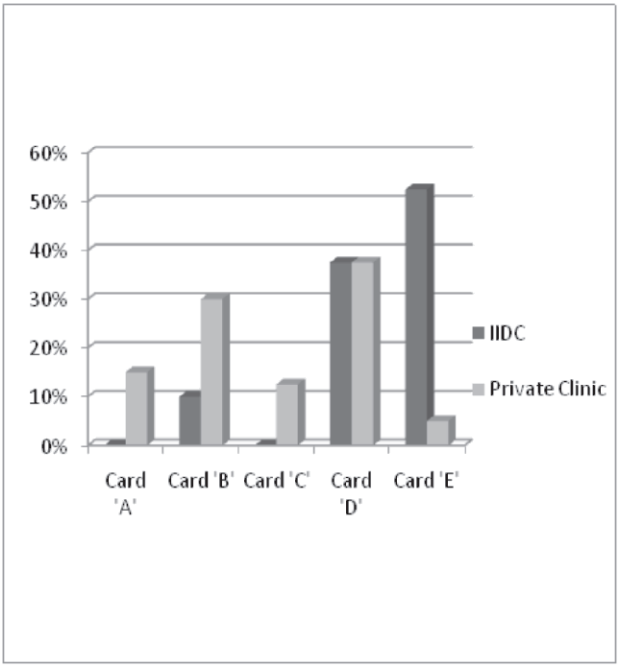

Figure 1: Distribution of the most preferred roles in treatment decision making.

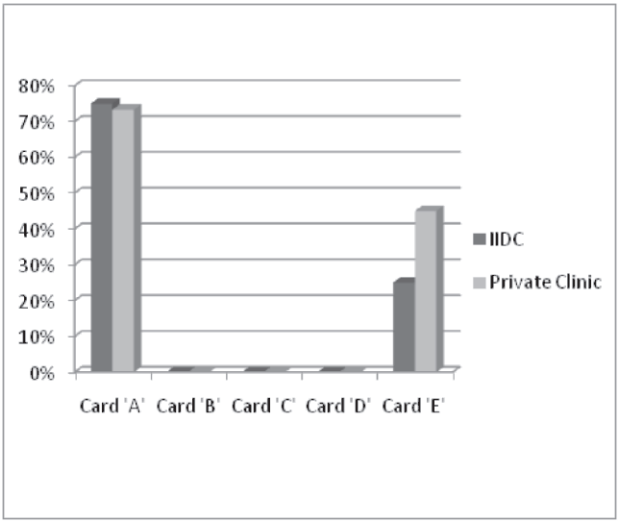

Figure 2: Distribution of the least preferred roles in treatment of decision making.

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Discussion

Previous studies using the Control Preferences Scale have mainly been with patients suffering from cancer or other serious illness.[8-10] However, the methodology has worked well in the dental context giving rise to interesting insights which are of great relevance to dental practitioners.[11, 12] This would suggest that this extremely useful methodology is transferable to dental settings.

Although this study focuses on a select group of patients and the results obtained from such a small sample size does not represent the preferences in dental decision making of the general population, it does provide valuable information regarding the attitudes patients can have towards involvement in their treatments. Dentists need to help patient participation in the decision making by explaining the nature of the disease, treatment options, benefits of the options, time required in completing the treatment and most importantly the cost incurred in achieving the desired treatment.

Analysis of the verbatim data regarding patients' rationales for their role preference revealed that 52 of the 80 patients interviewed mentioned lack of knowledge of the subject as influencing their ability to participate in treatment decisions, and several comments were: "I don't know the science behind medicine, so I'll leave the decision to someone who does".

Patients presenting at the private clinics in particular mentioned that they were paying extra to get treated by a specialist and hence they would seriously consider the decisions of their doctor. Trust was specifically referred to by 68 of the 80 patients, with comments like: "the doctor is a professional, therefore you should trust him/her", "if you can't trust the doctor, there's something wrong". Therefore, either the patients lacked knowledge about health care and hence had no choice but to trust the healthcare provider or they knew the doctor before hand having genuine trust in his/her abilities and decision making skills.

A further common theme amongst patients was lack of time for discussion. Twenty nine of the 80 patients cited lack of time as a reason, and comments were: "there isn't enough time for the doctor to really consider my opinions", "there's never enough time to sit and discuss everything".

In the part of preferences for patient participation in treatment decision making, the most preferred role in the private clinic is semi-active compared to a collaborative role in the hospital setting. It is interesting to see that 15% of patients at the private clinic choose option 'A' as their most preferred role with the rationale that they know beforehand the expenses involved in getting treatment from a private clinic and they would solely decide if or when is the correct time to proceed with the treatments.

Conclusion

In this study an active role was more commonly perceived in clinics than in the teaching hospital. Over-all lesser number of patients preferred an active rather than the passive role, however, there is no clear evidence that Pakistani patients prefer more active roles than do their counterparts in advanced countries. Finally, this finding suggests that a majority patients presenting at the Islamic International Dental College have positive attitudes towards participation in dental decision making if they are fully informed.

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ORIGINAL ARTICLE

A Comparison of Oral Misoprostol and Extra-amniotic Foley's Catheter with Oxytocin for Induction of Labour at Term

Asma Shaheen, Raazia Rauf, Attiqa Zaigham, Fareesa Waqar

ABSTRACT

Objective: To compare the efficacy and safety of misoprostol with a Foley's catheter and oxytocin for induction of labor at or beyond term.

Study Design: Quasi experimental study.

Place and Duration of Study: This study was carried out in the Department of Obstetrics and Gynaecology, Railway Hospital Rawalpindi from January 2008 December 2008.

Materials and Methods: Hundred patients requiring induction of labor at or beyond term with bishop less than 5 were randomized by lottery method to receive oral misoprostol or a cervical Foley's plus oxytocin. Patients in the misoprostol group (Group A) received 50 microgram misoprostol at 6 hourly interval for a maximum of 4 doses or until an adequate contraction pattern developed. Those in the Foley's group (Group B) had a Foley's catheter inserted in the cervix. Whereas oxytocin was administered intravenously by a standard incremental infusion protocol to a maximum dose of 36 milliunits/min.

Results: The mean induction delivery interval is 9.8 hours in group A while in Group B the mean induction delivery interval was 17 hours. Although all patients delivered in both groups within 24 hours but the mean induction delivery interval was prolonged in Foley's group as compared to misoprostol group. The neonatal outcome was comparable in both the groups.

Conclusion: Oral misoprostol at the dose 50 microgram is better than Foley's group for induction of labor at term.

Key Word: *Term, Primigravida, Induction of Labour, Misoprostol, Induction Delivery Interval.*

Introduction

Labour is commonly induced in response to a number of fetal and maternal situations, including post term pregnancy, Pre-eclampsia and rupture of the membranes without the onset of spontaneous contractions within the next 24 hours.[1] Different methods are used for induction of labor depending upon the bishop score. If bishop score is less than 5 then different methods of induction of labour are misoprostol,[2,3] dinoprostone , sweeping of membrane and many other mechanical methods. Results of different methods of induction of labor differ widely at different centers regarding their success rate, failure rate, complications and cost. Prostaglandin are used to under labour in about 23% of all confinement.[4] The prostaglandin E2 (PGE_2) dinoprostone, which is unstable at room temperature and requires refrigeration, is most commonly used.

Misoprostol a prostaglandin E-1 analogue manufactured for the prevention and treatment of gastric ulcer has also been evaluated as a cervical ripening agent. Costs of misoprostol is approximately 300 times less per dose than PGE2 ,stable at room temperature, easy to administer and may be given as an oral medication. There have been several meta-analysis and systemic reviews of randomized controlled trials evaluating the use of misoprostol for cervical ripening and labor induction. These reports are suggesting that misoprostol is effective ; but there is concern that

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misoprostol may increase the rate of tachysystole and hyperstimulation.[5] Oral misoprostol reduces the need for oxytocin infusion from 51% to 13% and shortens delivery time by 8.7 hours.[6] Induction of labour with this analogue does not affect the frequency at which caesarean section is required. There is an increase in the rate of uterine hyperstimulation resulting in changes in fetal heart rate (FHR) pattern and staining of the amniotic fluid with meconium but without any apparent deleterious effect on the outcome.[7]

Inflated Foley's catheter has been used successfully as a mechanical device for ripening of unfavorable cervix because it is simple, in-expensive, reversible and has no systemic serious side effects[8] compared to medical modes of cervical ripening. It has some association with an increase in caesarean section rate as compared to spontaneously laboring women.[9] In the case of women who have previously undergone a caesarean section and thereby run an elevated risk for uterine rupture in connection with vaginal delivery, induction of labour with misoprostol may further enhance this risk and is not recommended.[10] In a systemic review of 45 randomized trials, mechanical methods of labour induction were found to be less effective than prostaglandins and reduced the risk of uterine hyperstimulation; compared with oxytocin, there were fewer caesarean sections with mechanical methods.[11] The purpose of this study was to evaluate the efficacy and safety of misoprostol versus extra amniotic Foley's catheter and Oxytocin for induction of labour at term.

Materials and Methods

This Quasi experimental study comparing oral Misoprostol and Foley's catheter and oxytocin for induction of labour at term was carried out in the Department of Obstetrics and Gynaecology, Railway Hospital Rawalpindi from January 2008 December 2008. All women requiring induction of labour at or beyond term (> 37 weeks gestation) and Bishop score <5 were included in the study. Patients with previous Caesarean section or any other uterine scars, multiple pregnancies, Bishop score > 5, placenta previa, mal-presentations, ruptured membranes were excluded from the trial. After informed consent, women were randomized by lottery method and assigned to receive oral Misoprostol tablet in group A and Foley's catheter in group B. After complete history and examination, a reassuring fetal heart tracing was confirmed with a cardiotocograph. Vaginal examination was performed to assess the Bishop's score. Misoprostol (50 micrograms) was given orally to patients in group A and repeated after six hours if required. A maximum of 4 doses were given. The use of oxytocin was according to the labour ward protocol and was not started less than 4 hours after the last dose of Misoprostol. If cervix was not favourable for artificial rupture of membrane after 4 doses of Misoprostol tablets, the induction was considered to have failed and the woman was offered caesarean section. A partogram was maintained for progress of labour. In Group B; after Bishop score, pre-packed sterile Foley's catheter 20 F balloon was introduced and catheter balloon was inflated with 30 ml of sterile normal saline. Patients were observed for 10-15 min for any

leakage of amniotic fluid or deflation of balloon. After 12 hours if it was not expelled then oxytocin infusion was also started along with it. All information collected was recorded in a pre-designed Proforma.

The data was entered on SPSS Version 18 for statistical analysis. Student's t test was applied to compare induction delivery interval between oral Misoprostol and Foley's catheter with oxytocin groups. Statistical significance was assigned to P-value < 0.05.Percentage of indication of induction of labour ,Use of oxytocin, mode of delivery ,maternal outcome such as hyperstimulation syndrome, tachysystole , hypertonus , nausea and vomiting ,pyrexia of 38 c, antepartum hemorrhage , uterine rupture and neonatal outcome such as assessment of 1 min and 5 min APGAR score, need for intubation and NICU admission were calculated.

Results

Table I: Mean age and birth weight

	Oral misoprostol (n=50)	FOLEY'S CATHETER (n = 50)
Maternal age (years)	27.1	29.7
Gestational age (weeks)	39.6	40.2
Induction indication • Postdate • Hypertension/ PIH/ Preeclampsia • GDM • Oligohydramnios	 25 (50%) 13(26%) 10(20%) 2 (4%)	 33 (66%) 7(14%) 10 (20%) 0
Neonatal birth weight (Kilograms)	3.2 kg	3.4 kg

Table II: Induction delivery interval

Route	Mean	St. Deviation	St. Error (Mean)
Misoprostol n=50	9.8	2.74	0.5487
Foley's Catheter n=50	17.0	3.09	0.6921

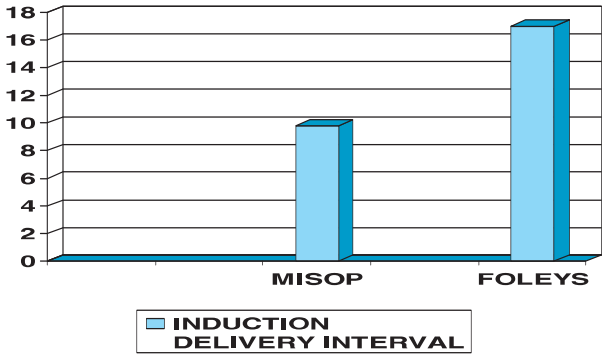

Figure 1: Induction Delivery Interval in both Groups

Table III: Maternal outcome

	Oral misoprostol (n=50)	Foley's Catheter (n= 50)
1 min Apgar	12 (24%)	12 (24%)
5 min Apgar	15(30%)	15(30%)
Need for intubation	2(4%)	2 (4%)
NICU admission	7 (14%)	5 (10%)

Table IV: Neonatal outcome

	Oral misoprostol (n=50)	Foley's Catheter (n=50)
Mode of delivery • Caesarean section • SVD	 8 (16%) 42 (84%)	 17 (34%) 33 (66%)
Tachysystole	7(14%)	0
Hypertonus	0	0
Hyperstimulation	2 (4%)	2 (4%)
PPH	3 (6)	3 (6%)
Uterine rupture	0	0
Nausea, vomiting,fever	3 (6%)	2(4%)
Failed induction	3(6%)	17 (34%)

The patients characteristics like age and parity were comparable in both the groups. The mean age in misoprostol group was 27 years and in the Foley's group it was 29.7 years.The mean gestational age in group A was 39.6 weeks and in group B was 40.2 weeks. Different indications for induction of

labor were summarized in Table I .The commonest indication was postdated pregnancy in both the groups. Table II showed induction delivery interval. Induction delivery interval was prolonged in Foleys group as compared to misoprostol group. The mean induction delivery interval was 9.8 hours in group A and 17 hours in Foley's group which statistically was not significant (p value=0.654) .Need of Oxytocin infusion was more in group B (100%) than in group A (21%). Although all patients delivered within 24 hours but delivery occurred earlier in misoprostol group than Foley's group. Labour was interrupted by caesarean section in 8 (16%) women in group A and 17 (34%) in group B. The commonest indication of caesarean section in group A was fetal distress and in group B was failure to progress in active phase of labor.The incidence of failed induction was higher that is 17 (34%) in group B than group A, in which it was 3 (6%) .There was increased incidence of tachysystole in group A i.e., 7 (14%), while none in the Foley's group. The incidence of PPH was 3 (6%) each in both groups. Three (6%) patients developed fever in misoprostol group (Table III). For the neonates the mean birth weight, the incidence of 5 minute APGAR score were similar. One baby developed meconium aspiration in misoprostol group and none in the Foley's group (Table IV). The incidence of N.I.C.U admission is almost similar in both groups

Discussion

Misoprostol has been shown to be effective when given orally or vaginally for induction of labour. With vaginal administration doses of 50 µgm and more have been associated with a higher incidence of excessive uterine contractility.[12] The oral route may have advantages in terms of easier administration and lack of restriction of mobility. Also, in keeping with the pharmacokinetics of drug, it may be associated with lower uterine hyperstimulation rate.[13] There is attractive possibility of administering the drug without repeated vaginal examinations which would be of particular benefit in patients with prelabor spontaneous rupture of membranes. Another study in which induction of labor using a Foley's balloon with or without extra-amniotic saline infusion was compared. Results showed shorter induction to vaginal delivery time in Foley's with extra- amniotic saline infusion than with Foley's alone, without affecting cesarean delivery rates.[13] Cormi et al recently conducted a study for cervical ripening with Foley's catheter concluded that transcervical use of Foley's catheter is safe for pre-induction cervical ripening , and the associated risk of maternal and perinatal infections are negligible.[13]

Shetty et al concluded that with most of the parameters of efficacy there was no statistical difference in the 50µg and 100 µg misoprostol groups. However, there were significantly more failed inductions in low dose groups with more doses of misoprostol required. In that study there was failed induction with misoprostol in 100 µg group is 6% while in our study there is 10% incidence of failed induction with misoprostol using 50 µg dose.[14]

A large number of randomized trials suggest that vaginally administered misoprostol is an effective agent for cervical ripening and labor induction. The main concern with this technique is the incidence of excessive

uterine contractions, which appears to be dose related. The higher the misoprostol dose, the shorter the induction to delivery time but the higher rate of uterine hyperstimulation.[15] Tachysystole with or without fetal heart rate changes continues to be the most common complication of misoprostol for cervical ripening and induction of labor. In the current study where patients received serial 50µg doses of misoprostol six hourly; 13.3% of women were noted to have at least one episode of tachysystole.

In our study, more oxytocin is required in Foley's catheter group as compared to misoprostol group. In a study conducted in 2008, in which comparison between supracervical Foley's catheter , intravaginal dinoprostone gel , supracervical Foley's catheter and 100 µg oral doses of misoprostol or serial 100 µg oral doses of misoprostol showed that women in the balloon plus misoprostol group were treated with lower doses of oxytocin.[16]

In our study the induction delivery interval is prolonged in the Foley's group as compared to misoprostol group, but it is not statistically significant. While, the previously mentioned study showed that the median induction to delivery time was longer with misoprostol. The relevant neonatal out comes were comparable to both groups in our study as well as in the previously mentioned study. [17]

Oral misoprostol has all the properties that constitute a viable technique for labor induction. It is effective, inexpensive, easily administered, and stable at room temperature and well tolerated by the mother and fetus. In contrast to oxytocin, misoprostol does not require to be mixed as solution and there is no requirement of an infusion pump thus reducing the possibility of drug errors.

Extra amniotic saline infusion (EASI) with concomitant oxytocin administration was associated with a shorter interval from induction to delivery and a higher rate of successful vaginal delivery within 24 hours compared with intravaginal misoprostol with unfavorable cervix .In a study, EASI with concomitant oxytocin administration appears more effective and is associated with fewer FHR tracing abnormalities than vaginally administered misoprostol for cervical ripening and labor induction. EASI however, had more rapid cervical ripening and shorter induction delivery interval.[18]

In a local study in which trial of extra amniotic saline infusion with oxytocin versus prostaglandin E2 pessary for induction of labor, showed that both modes of induction were equally effective in terms of mode of delivery and APGAR scores.[19]

Another study showed that Induction of labour using mechanical methods results in similar caesarean section rates as prostaglandins, with a lower risk of hyperstimulation. Mechanical methods do not increase the overall number of women not delivered within 24 hours. However, the proportion of multiparous women who did not achieve vaginal delivery within 24 hours was higher when compared with vaginal PGE2 and mechanical methods for induction of labour.[20]

According to Olimpio et al., Vaginal misoprostol is more effective than and as safe as Foley's catheter and oxytocin for induction of labor in term and post-term pregnancy.[21] Another study conducted in 2011 showed that induction with

intravaginal misoprostol and transcervical Foley's catheter have similar effectiveness and similar risk of caesarean section; but, with a reduced risk of tachysystole with transcervical Foley's catheter.[22]

Conclusion

A transcervical balloon catheter can be used to achieve effective and safe induction of labour. Induction with misoprostol is equally effective and safe. Its cost effectiveness and easy storage due to its stability at room temperature favours its use especially where resources are limited.

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ORIGINAL ARTICLE

Genetic Mapping of Candidates of Deafness Genes in Pakistani Families

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ABSTRACT

Objective: DNA analysis for the Genetic Mapping of Candidates of Deafness Genes in Pakistani Families.
Study Design: It was a cross sectional study.
Place and Duration of the Study: Department of Biochemistry/Molecular Biology, Quaid I Azam University, Islamabad Pakistan. The Clinical examination, biochemical tests, interpretation of results and preparation of results completed in approximately one year, 2006 2007.
Materials and Methods: Study was conducted on two Pakistani families.
Subjects (Families) selected for the study:
Two Pakistani families labeled as family A and B were selected for the study. Family A comprises of three normal and three affected (Deaf) individuals. Family B comprises of two normal and four affected (Deaf) individuals. The blood samples were immediately dispatched to Molecular genetic laboratory, Quaid I Azam University, Islamabad for analysis 2006 2007.
Results: In family A, linkage was established to DFNB47 locus on the chromosome 2p25.1-p24.3. In family B, linkage to DFNB1 locus was excluded first by genotyping polymorphic microsatellite markers linked to the candidate region and then by sequencing GJB2 gene
Conclusion: The genetic mapping of candidates of deafness genes brings greater understanding of molecular basis of deafness and would modify the preventive and curative methods.

Key words: *DNF, DNA, GJB, PCR and Electrophoresis*

Introduction

Hearing impairment is the most common sensory disorder worldwide.[1] It is clinically and genetically very heterogeneous and auditory genes are discovered at very rapid pace. Genetic factors are probably responsible for more than 50% of the cases of early onset H1. [2] Where as in most of the late onset H1 a combination of genetic as well as environmental factors is involved.[3] Studies of the epidemiology of hearing impairment have suggested that approximately 1 in 1000 to 1 in 2000 children show a profound hearing loss at birth or in early childhood.[4, 6]

Most frequently hearing impairment, is classified as syndromic or non syndromic, or according to its transmission via as autosomal dominant, autosomal recessive, X-Chromosomal recessive, or maternal trait.[7]

X-Chromosomal dominant and Y linked transmission are rare. Syndromic hearing impairment is associated with malformation of the external ear or other organs with medical problems involving other organ systems. More than 70% of the hereditary hearing loss is non syndromic.[8]

Of the 30,000 50,000 human genes, 1% i.e. 300 500 genes, are estimated to be necessary for hearing.[9] Gap junctions are clusters of intercellular channels, vital of intercellular communication. The following connexins expressed in the auditory system have been implicated in hereditary deafness, GJB2, GJB3, GJB6 and GJA1.[11, 14, 16] Mutation in the Alpha tectorin gene on chromosome 11q has been found in families with both autosomal dominant and autosomal recessive having prelingual hearing loss.[15] Mutations in the Trans membrane inner ear (TMIE), Trans membrane channel like 1 (TMC1), MY06

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gene, MY015 gene, transcription regulators, POU3F4, POU4F3, ICERE-1, COCH, KCNQ4, COL11A2 and mitochondrial genes (12 SrRNA gene) have been found to be involved in different types of deafness in many studies.[17, 30]

Materials and Methods

A cross sectional study was conducted on two Pakistani families at Department of Biochemistry/Molecular Biology, Quaid I Azam University, Islamabad Pakistan.

The Clinical examination, biochemical tests, interpretation of results and preparation of thesis completed in approximately one year 2006-2007.

Families Studied

Two families labeled as family A and B were selected for the study. Family A comprises of three normal and three affected (Deaf) individuals. Family B comprises of two normal and four affected (Deaf) individuals. After detailed discussion with the elders of these families, genetic pedigrees were drawn by following standard method.[37] Mode of inheritance was inferred through pedigree analysis.

Blood Sampling

Blood samples from both normal as well as affected individuals including their parents were collected by 10 cc syringes (08×38 mm 21G×11/2) in standard potassium EDTA tubes. The blood samples were immediately dispatched to Molecular genetic laboratory, Quaid I Azam University, Islamabad for analysis 2006-2007.

Extraction and Purification of Genomic DNA from Blood

Genomic DNA was extracted from blood by phenol / chloroform method.

DNA Dilution and Micro Pipetting

Polymerase Chain Reaction (PCR)

PCR was performed using gene Amp PCR System 2400 and 9600 thermo cycler (Perkin Elimer USA).

Agarose gel Electrophoresis

Agarose gel Electrophoresis was carried out to analyze the amplified DNA samples. After Electrophoresis amplified product was detected by placing the gel on UV Trans illuminators (Life Technology, USA).

Polyacrylamide gel Electrophoresis

Gel was photographed by using Digital Camera DC 120 (Kodak, USA).

Genotyping and Primer Database Analysis

Microsatellite markers mapped by Cooperative Human Linkage Centre (CHLC), were obtained from research genetics, Inc. (USA). The cytogenetic location of these markers as well as the length of the amplified product was obtained from genome data base homepage (www.gdb.org) and Marshfield Medical Center(www.marshmed.org.gov/genetics)

Linkage studies

Linkage studies were performed, Automated Genetic Analyzer ABI Prism 310 (Applied Bio System, USA).

Results

In the present study family A was first tested for mapping to several known loci by using polymorphic microsatellite markers from their candidate linkage intervals. The family A was found to be linked to DFNB47 locus on chromosomal region 2p25.1-p24.3. Two loci for ARNSH1 have previously been localized to chromosome.[2]

In family BDNFB1 and several other loci were tested for linkage. Electropherograms obtained by genotyping the microsatellite linked to the candidate linkage gene interval revealed that the affected individuals were heterozygous for different combinations of

parental alleles, thus indicating exclusion of family B from linkage to DFNB1 and several other known autosomal recessive non syndromic hearing loss loci. Linkages to DFNB1 locus were also excluded by sequencing the coding region of exon 2 of GJB2 gene. The novel locus harboring the disease gene in family B can be located by a genome wide search by using polymorphic markers spaced at 10 cM apart on all the autosomes.

Discussion

To date 23 known genes lie in the 5.3 Mb-region that contains DFNB 47. One of the genes in this region, KCNFI, is a strong candidate for DFNB47. This gene codes for potassium voltage-gated channel. Potassium ion channels are a diverse family of plasma member's proteins that play an essential role in various cellular processes, including maintenance of membrane potential and cell signaling.[31] KCNQ4 is a voltage gated K+ channel gene expressed in the cochlea. Voltage-gated K+ channel genes have been shown to be responsible for various hereditary diseases. For instance, mutation in the KVLQTI gene (a voltage-gated K+ channel gene) result in Jervell and Lange-Nielsen syndrome (JLNS) and Long QT syndrome, which are inherited AR disease, with congenital HI being one of their characteristics.[32] JLNS can also result from mutations in another voltage-gated K+ channel gene, KCNEI.

Another good candidate gene is inhibitor of DNA binding 2 (ID2), which is a member of the ID family genes that promotes cell proliferation. In embryonic mouse, ID2 expression was detected in the vestibular and acoustic ganglia, and also in the epithelium of the otic vesicle and surrounding mesenchyme[33]. Other genes that are expressed in the inner ear include: (1) cleavage and polyadenylation specific factor 3 2004); (2) tyrosine 3/ tryptophan 5-monooxygenase (YWHAQ), which is also expressed in the spinal cord of patients with amyotrophic lateral sclerosis.[35] And ornithine decarboxylase 1 (ODCI), the rate limiting enzyme in polyamine synthesis.

The recent identification of several deafness genes by molecular genetic studies has enabled the molecular basis of normal and pathological auditory function. In the coming years, further deafness genes are sure to be identified and mouse models for the human disease will be constructed as start in the long process of understanding the pathological processes involved in deafness. The rate of discovery of deafness genes by positional cloning in human will be accelerated by the freely available human genome sequence and by a catalogue of Expressed Sequence Tags (ESTs) within genetic intervals known to contain locus for human hereditary hearing loss. To assist in the identification of deafness genes cDNA library has been synthesized, partially sequenced and many ESTs assigned map position.[36]

Conclusion

The genetic mapping of candidates of deafness genes brings greater understanding of molecular basis of deafness and would modify the preventive and curative methods.

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ORIGINAL ARTICLE

Injudicious Use of Topical Steroids, A Misconcept in Treatment of Patients with Acne Vulgaris

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ABSTRACT

Objectives: To determine the frequency of use of topical steroids by acne patients and to observe various cutaneous side effects in these patients.

Study Design: Descriptive study

Materials and Methods: This study was conducted in Dermatology out patient department, Pakistan Railway Hospital, Rawalpindi from February 15 to April 15, 2012. Total 110 patients were enrolled in the study. All the patients were having clinical diagnosis of acne vulgaris. Patients of both genders with age range of 13- 35 years were included in the study. Frequency of patients using topical steroids to treat acne was calculated and cutaneous side effects of topical steroids were noted.

Results: Out of 110 patients of acne, 76 were females (69%) & 34 were males (31%). Age range of patients was from 13 to 35 years. Topical steroids were used by 68 patients (62%) with acne vulgaris. Mean duration of application of topical steroids ranged from 2weeks to 5months. Most commonly used steroid was betamethasone valerate(62%), followed by clobetasol propionate(29%) and flucinolone acetonide(8%). Out of 68 patients using topical steroids cutaneous side effects were seen in 50 patients in the form of aggravation of existing lesions in 18 patients(36%), perioral dermatitis 12 patients(24%), telangiectasias 8 patients(16%), increased facial hair growth 7 patients(14%), tinea incognito in 3 patients(6%) and acne rosacea in 2 patients(4%).

Conclusion: This study shows that a large number of patients are using topical steroids to treat acne lesions. Use of topical steroids is a misconcept in treating the lesions of acne vulgaris and their use is associated with various cutaneous side effects including aggravation of acne lesions, skin atrophy, telangiectasias, perioral dermatitis, hirsutism, acne roacea and tinea in cognito.

Key Words: *Topical corticosteroid, Retinoids, Lasers*

Introduction

Acne is a chronic inflammatory disease of pilosebaceous Unit. Most commonly it affects the face (99% of cases), less frequently it also affects the back and chest. It is characterized by increased sebum production, formation of open and Closed comedones, papules and pustules.[1,2]

The condition usually starts in adolescence and frequently resolves by mid-twenties. Various treatment modalities are available to treat acne ranging from antibiotics, retinoids and lasers.[2,3] As in more than 90% of cases it involves face it has an important impact on appearance of an individual and psychosocial effects. [4, 5]

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Topical corticosteroids constitute one of the largest groups of drugs being used in dermatology. Topical corticosteroids were first synthesized in 1930"s in the form of cortisone. Hydrocortisone was first described in 1951 for topical use and, subsequently, the super-potent steroids were introduced in 1974.[6,7]

Clinical effectiveness of glucocorticoids is related to its four basic properties; antiproliferative effects, immunosuppressive, vasoconstrictive, and anti-inflammatory effects. [8,9]

Topical corticosteroids used in various dermatological diseases can lead to an increased risk of side effects that have become more prevalent since the introduction of higher potency steroids.[9,10] Local side effects such as epidermal thinning, dermal striae, atrophy,

telangiectasia, tinea incognito, purpura, can occur and long term use can lead to steroid rosacea.[10,11,12] These local adverse effects of topical steroids are known, but are poorly characterized with respect to their true incidence.

Abuse of topical steroid as cosmetic cream is quite common now a days including their use to treat acne. Some patients might have good response initially, but on continuation of application of topical steroids acne worsens and other cutaneous side effects begin to appear that is the time when patients come to seek medical advice.[13,14] In this study we find out frequency of patients using topical steroids to treat acne before visiting dermatologist. We also observed various cutaneous side effects that were appearing due to the use of topical steroids.

Materials and Methods

The study was conducted in Dermatology out patient department, Pakistan Railway Hospital, Rawalpindi. Duration of study was two months from 15th February 2012 to 15th April 2012. A total of 110 patients with acne vulgaris were enrolled in the study. Sampling was done by non-probability convenient sampling. All the patients were having clinical diagnosis of acne vulgaris based on the presence of papules, pustules, comedones and post acne scars. An informed verbal consent was ensured from every study subject.

All the patients were having involvement of face and in some patients there was also involvement of upper trunk. Patients of both genders with age range of 13-35 years were included in the study. Patients with drug induced (systemic) acne were excluded as were the patients who used topical steroids for some other reason and later on developed acne form eruption on face. Patients qualification/ occupation was also noted and they were asked about person prescribing steroid whether friend, colleague, or pharmacist. Duration and potency of steroid used was also noted. Duration of use of topical steroids was from 2 weeks to 5 months. Percentage of patients using topical steroids to treat acne was calculated. Cutaneous side effects of topical steroid were also noted. SPSS 13 was used to analyze the data.

Results

Out of 110 patients, 76 were females (69%) & 34 were males (31%). Patients were between 13 to 35 years of age. Out of 110 patients topical steroids were used by 68 patients (62%). Mean duration of application of topical steroid ranged from 2 weeks to 5 months. Most commonly used steroid was betamethasone valerate(62%), followed by clobetasol propionate(29%) and flucinolone acetonide(8%). Reason for early withdrawal or short duration of use was aggravation of acne lesions and other cutaneous side effects. Most common side effect observed was aggravation of existing lesions with appearance of new lesions. (Figure1) Other side effects included perioral dermatitis (Figure2), increased hair growth on face (Figure3) telangiectasias and acne rosacea(Figure4) involving facial skin (Table I).

In most of the patients, use of topical corticosteroid was suggested by their friends and chemists followed by beauticians, relatives and in some cases on general practitioner's advice (Table II).

Discussion

Acne is a polymorphic, inflammatory skin disease. It is one of the most frequent skin

Figure 1: Aggravation of existing acne lesions

Figure 2: Perioral dermatitis

Figure 3: Increased hair growth on face

Figure 4: Acne rosacea

Table I:Frequency of side effects of topical steroids in study population(n= 62)

S. No	Side Effects	Percentage
1	Aggravation of existing lesions	18 (36%)
2	Perioral dermatitis	12 (24%)
3	Telangiectasias	8 (16%)
4	Increased facial hair growth	7 (14%)
5	Tinea incognito	3 (6%)
6	Acne rosacea	2 (4%)

Table II: Frequency of Prescriber of topical steroids in study population (n=62)

S.No	Prescriber	Number (%age)
1	Friends/colleagues	55.5%
2	Pharmacist/Chemist	25.4%
3	Beauticians	13.6%
4	Relatives	4.6%
5	General Practitioners	0.9%

diseases.[15,16] Even in Western countries the prevalence of acne in adolescents is between 50% and 95%. Acne is a disease primarily of adolescence. It is triggered by initiation of androgen production by the adrenal glands and gonads, and it usually subsides after the end of growth. [17, 18]

Corticosteroids have been in use for over 50 years. Topical corticosteroids were first synthesized in 1930's in the form of cortisone. Later on fluorinated and other potent topical steroids were

introduced.[19,20,21] Topical steroids belongs to a class of compounds with a broad effect on immune regulatory functions. They have both anti-inflammatory and immune modulating effects. Varied clinical presentations are seen with prolonged and continuous use of topical steroids.[22,23]

Topical corticosteroids are one of the most widely used therapeutic agents in dermatology.[10,11,12] They provide rapid symptomatic relief in almost all inflammatory dermatosis, especially in the short term. Even incorrect use, for instance in infectious dermatosis, produces an initial improvement in the symptoms.[24,25] In our study patients were misusing topical steroids to treat acne to get their acne lesions resolve soon.

A study was done in India regarding use of topical steroids to treat various dermatoses. A total of 2926 patients with facial dermatoses were screened, of which 433 (14.8%) were using topical steroids and out of them 104 (24%) of patients were using them for acne.[13] A study done in Iraq reported that 7.9% of the dermatology clinic attendees are misusing topical steroids.[21] In a study on facial topical steroid misuse from China, the proportion of patients applying topical steroids to the face was 28.5%.[20]

Almost 15% of the dermatology outpatients with facial dermatosis are already using topical steroids when they contact a specialist. Alarmingly, in more than 93% of these cases, the topical steroids is either not needed at all, used for much longer than needed, of the wrong potency or is instituted without a diagnosis of the underlying condition.[6,7,19]

We have seen in our study that the suggestions to use them were given by friends, relatives, pharmacy, beauty parlors and even doctors. Basic purpose of starting the steroid cream in all of them was to treat acne lesions and also to look fairer and beautiful .It was found in this study that Betamethasone valerate was the most commonly used topical corticosteroid, may be due to this being the most cost-effective and easily available amongst all.

In our study use of topical steroids was most common in teenage group and mostly in females. Patients were also asked about their qualification. Misuse of topical steroids was also seen in patients who have done their graduation or were above graduates.

In Pakistan different corticosteroid molecules, ranging in potency from mild to super-potent, are available for topical use on the skin. These molecules are marketed under a variety of brand names by multiple pharmaceutical companies. Most of these formulations are available at every medical store with or without a prescription. Because of inadequate policing of medicine shops by the authorities these topical steroids are sold without any prescription. So the patients have free access to them.

Cutaneous side effects of topical steroids have been studied in various studies in western world mainly in context of their use in atopic dermatitis.[11, 12] In our region, due to free availability of topical steroids as over the counter drugs, side effects are also seen in context of treating acne .Besides that their use as wonder drug to become fairer is increasing.

As indicated by the data in this study, the problem of topical corticosteroid misuse is significant,and unless urgent steps are taken on all possible fronts we will continue to face these side effects of topical steroids.

Awareness programmes regarding Indications and contraindications of topical steroids need to be conducted to general community and general practitioners to avoid misuse of topical steroids.

Conclusion

This study shows that use of topical steroids to treat acne lesion in our population is quite common. This misconcept in patients with acne vulgaris is associated with cutaneous misconcept in patients with acne side effects including aggravation of population is quite common. This acne lesion, skin atrophy telangiectasias, perioral dermatitis, lesions in our, hirsutism, acne rosacea and various other side effects. Awareness programs should be conducted to make people aware of these side effects. This study highlight the need for provision of better information and education to patients and possibly general practitioners regarding the safety, potency and appropriate use of topical corticosteroids.

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ORIGINAL ARTICLE

Treatment of Colle's Fracture with Wrist Immobilization in Palmar flexed & Dorsiflexed Position

Sohail Iqbal Shaikh, Abdul Basit, Javed Iqbal, Saba Sohail Shaikh, Imran Sohail Shaikh

ABSTRACT

Objective: To evaluate and compare the radiological and functional results of immobilization of Colle's fracture treated conservatively in two different positions of wrist i.e. palmarflexion(PF) & dorsiflexion (DF).

Study Design: A Descriptive Cross Sectional Study.

Materials & Methods: Sixty patients with closed Colle's fracture who were treated conservatively by close reduction and below elbow cast application were included in this study. The study was conducted at Department of Orthopedics, Railway Hospital, Westridge, Rawalpindi from November 2008 to May 2011. The patients were alternately allocated to dorsal or palmar flexed immobilized position of wrist. Patients were followed up for a minimum six-month period. The radial tilt, palmar tilt and ulnar variance were measured at 6 month follow up. The results were scored by Demerit Scoring System of Saito.

Results: All fractures were united. Individual movement of dorsiflexion, palmar flexion, supination, and radial-ulnar deviation (except pronation) were all significantly better in the dorsiflexed-immobilized group as compared with the palmar flexed immobilized group. Grip strength recovery with subjective assessment was better in the dorsiflexed group as compared to the PF group. Radiological parameters were markedly better in the dorsiflexed group. 100% of patients in the dorsiflexed group had overall excellent results as compared to 23.3% in the palmar flexed group in terms of radiological & functional outcome.

Conclusion: Functional & radiological results of Colle's fractures are superior if the fractures after reduction are immobilized in dorsiflexion of wrist rather than in conventional palmar flexion position.

Keywords: *Colle's fracture, immobilization, dorsiflexion.*

Introduction

About 200 years have passed since Colle's described a fracture of the distal end of the radius, and it is one of the most common fractures encountered by the orthopedic surgeon. [1] Such injuries account for approximately one-sixth of fractures treated in emergency departments.[2]

The majority of distal radius fractures occur as isolated injuries in two distinct populations: youth involved in sports who sustain a relatively high-energy fall, and seniors with osteoporotic bone who sustain a low-energy fall. Fracture examination includes an assessment of neurovascular status. Range of motion of the wrist, including supination, pronation, flexion, and extension should be evaluated if possible. Accurate assessment of standard radiographs is essential for appropriate management.[3] And includes true posterior-anterior (PA) and true lateral projections.[4]

Each view contains a small number of important landmarks and measurements for proper interpretation. Distal radius fractures can be described using either a fragment-specific classification or the standard Frykman classification.

The Frykman classification system divides the fractures among four main groups based upon joint involvement.

For immobilization we generally need to avoid positions of marked palmar flexion and ulnar deviation (Cotton-Loder position); a truly stable fracture will probably be stable in any position once it is reduced; fractures which are stable in only extreme positions, should be considered to be unstable and probably require additional methods of fixation (pins, external fixation, ORIF).[5] While most orthopedists probably

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immobilize distal radius fractures in slight flexion and pronation, but there is some evidence to suggest that distal radius fractures should be immobilized with the wrist extended; as noted by Gupta et al. Position of wrist made no difference with regards displacement, in displaced extra-articular fractures with no comminution; in comminuted fractures, both extra articular and intra articular, best results occurred in fractures treated in dorsiflexion; functional results were superior when fractures were treated in dorsiflexion and in contrast palmar flexion was associated with higher rate of fractures displacement. Dorsiflexion is also a better position for rehabilitation of the fingers.[6]

Numerous previous studies have taken the amount of displacement into consideration but very few have dwelt on the role of the position of immobilization as a parameter for comparing radiological and functional outcome.[7,8,9,10] The present study was undertaken to evaluate the functional and radiological outcome of conservatively treated extra-articular fractures when wrist was immobilized in DF compared to immobilization in PF.

Materials and Methods

This prospective study included 60 patients in the age group of 16-75 years with closed extra-articular fractures of the lower end radius from November 2008 to May 2011 in the Orthopedics Unit of Railway General Hospital (RGH) Rawalpindi. The study was conducted after approval from the hospital ethical committee. The study included extra-articular fractures of Frykman category I and II. Extra-articular fractures with extreme displacement or grossly comminuted fractures that were not amenable to reduction by manipulation were treated surgically were not included in the study. Patients who did not complete a six month follow up were also excluded.

Standard anteroposterior (AP) and lateral radiographs of injured wrist were taken. All were treated initially by below elbow plaster of Paris (POP) slab for a period of approximately five days followed by closed reduction and below elbow cast application under general anesthesia. Reduction of fractures was done under image intensifier guidance using appropriate reduction maneuver. Dorsal bending type fractures (Colle's) having increased dorsal angulations, shortening and radial deviation of distal fragment were reduced by applying longitudinal traction, ulnar deviation and palmar flexion at fracture site. Similarly palmar bending fractures (Smiths) having a reverse deformity of palmar angulations, shortening and radial deviation were reduced by producing opposite deformity by giving longitudinal traction, ulnar deviation and extension at fracture site.

Once the fracture was reduced as seen under C-arm, the patients were allocated dorsal or palmar flexed attitude of the wrist alternately, irrespective of the fracture geometry and immobilized with a below elbow POP cast. The degree of immobilization was either 15° PF or 15° DF.

Plaster removal was done at four weeks. It was followed by active exercises during the first week and following active and passive exercises one week later. During the first two weeks of cast removal a crepe support was given.

The results were scored by Demerit Scoring System of Saito and by taking AP and lateral

radiographs. Assessment of pain, disability, i.e. limitation of motion, subjective evaluation was done. Radiological parameters, radial tilt, palmar tilt and ulnar variance were measured at 6 month follow up.

Radial tilt: is the angle between one line drawn perpendicular to the long axis of the radius and a second line drawn between the distal tip of the radial styloid and the central reference point (CRP).

The CRP lies midway between the palmar ulnar corner and the dorsal ulnar corner of the distal radius. The average angle is approximately 20 to 25 degrees.

Palmar tilt: is the angle formed by the intersection of one line perpendicular to the longitudinal axis of the radial shaft and a second line drawn through the apices of the palmar and the dorsal rims of the radius. The normal palmar tilt on a standard lateral projection averages 11.2 ± 4.6 degrees.

Ulnar variance: is the distance between two lines drawn perpendicular to the longitudinal axis of the radial shaft: one through the distal articular surface of the ulnar head and the second through the CRP. Normally, the radial surface is distal to the ulnar surface by 1 to 2 mm (negative ulnar variance).

Movements were measured in degrees from neutral position with the help of goniometer. Grip strength was measured as mm of Hg with the help of a dynamometer.

The functional results of both groups using the Saito's scoring system were calculated by adding all the points and were finally graded as follows:

Excellent 0-3, Good 4-9, Fair 10-15 and Poor 16-26. Both the DF group and PF group were compared with each other on the above mentioned parameters of Saito.

Results

The study included 60 patients with Frykman category I/II Colles fractures. The age ranged from 16-75 years with a mean age of 55.2512.34 years. Thirteen (21.7%) were males, whereas 47 (78.3%) were females. Forty two (70%) fractures were on right side. After reduction 30 patients were immobilized in PF and 30 patients immobilized in DF. These patients were scored at the end of 6 month follow up.

Subjective evaluation:

It was done on the basis of pain, restriction of movements and disability. At final follow-up out of 30 patients of DF immobilized group 23, 7, 0 and 0 had excellent, good, fair and poor results respectively as compared to 12, 15, 2 and 1 patient in PF immobilized group; this difference was statistically significant (p value = 0.025).

Objective evaluation:

Residual deformity

Radial tilt: At final follow-up 27 (90%) patients of DF group had 13 to 33° radial tilt as compared to 17 (56.7%) patients in PF group (p value = 0.004).

Palmar tilt: At six months 23 (76.6%) patients of DF immobilized group had 1 to 21° palmar tilt as compared to 11 (36.6%) patients in the PF immobilized group (p value = 0.002).

Ulnar variance: At six months 28 patients (93.3%) in the DF group had normal variance i.e. -2 to 0 mm. In the PF group only 15 patients (50%) had normal ulnar variance (p value = 0.00).

Range of movements:

Dorsiflexion: At six months all 30 patients (100%) in the DF group had dorsiflexion more than 45° as compared to 11 patients

(36.6%) in the palmarflexion group (p value = 0.00).

Palmar flexion: At final follow-up all 30 (100%) patients of the DF group had palmar flexion more than 30° as compared to 21 patients (70%) in the PF group (p value = 0.001).

Supination: 30 patients (100%) had more than 50° supination in the DF group as compared to 24 patients (80%) in the PF group (p value = 0.010).

Pronation: 28 patients (93.3%) in the DF group had more than 50° pronation as compared to 24 patients (80%) in the PF group (p value = 0.129).

Ulnar deviation: 29 patients (96.6%) in the DF group had more than 15° ulnar deviation as compared to 20 patients (66.7%) in the PF group (p value = 0.003).

Radial deviation: 28 patients (93.3%) in the DF group had more than 15° ulnar deviation as compared to 18 patients (60%) in the PF group (p value = 0.002).

Grip strength It was measured in both dominant and non-dominant hand and scoring was done accordingly in the final follow-up. There were 27 patients (90%) in the DF group with more than two third grip recovery of normal side as compared to only 15 patients (50 %) in the PF group (p value = 0.003).

Arthritis changes They were not seen in any of the cases in both the PF as well as DF group as the follow up was short.

Complications None of the patients in either group showed any complication at final follow-up.

Final Follow-up : At the final follow-up, 30 (100%) patients in the DF group showed overall excellent results in terms of radiological & functional outcome as compared to 7 (23.3%), 22 (73.3%) and 1 (3.3%) patient with excellent, good and fair results respectively in the PF group (p value = 0.000)

Discussion

No clear consensus exists as to the best position for immobilizing the wrist in a cast in extra-articular fracture of lower end radius. Sarmentio et al, advocated immobilization in the position of supination to decrease the deforming force of the brachioradialis, which may cause loss of reduction.[12,13]

In contrast, Wahlstrom recommends immobilization in pronation because he claims that the pronator quadratus causes the deforming force and is responsible for loss of reduction.[14]

According to the John Charnley. Colle's fracture should be treated in palmar flexion and ulnar deviation as dorsal periosteal hinge provides stability. Following this, traditionally, extra-articular fractures of the lower end of radius were classically treated by closed reduction, cast immobilization in palmar flexion and ulnar deviation. But this conventional position has higher chance of redisplacement, inhibits hand functions and has greater associated complications like median nerve compression.[15]

Van der Linden conducted a study by applying cast in different positions of wrist and compared between complete cast and splint. He studied the anatomical and functional outcome and found that the results were surprisingly same; thereby concluding that the technique of immobilization plays a subordinate role.[16]

The concept of our study was influenced by the original recommendation by Zuppinger in 1910 and Bohler in 1929

proposed that the position of the wrist should be changed from slight palmar flexion at initial post reduction to neutral or slight extension but maintaining ulnar deviation at 10 to 14 days post reduction.[17,18]

Our study resembles to some extent the study done by Gupta A[12] in 1991 on 204 patients in which displaced Colles' fractures were subjected to closed reduction and plaster immobilization randomly allocated to one of the three groups with respect to wrist position. Palmar flexion, neutral or dorsiflexion. They reported that in displaced extra-articular fractures with no comminution the position of the wrist made no significant difference in regards to later displacement. In comminuted fractures, both extra-articular and intra-articular, the best anatomical results were in fractures treated in dorsiflexion. Functional results in all fractures, regardless of the classification were superior if the fractures were treated in dorsiflexion.

In this study we compared the functional and radiological results of extra-articular fractures of lower end radius treated conservatively in two groups, one with wrist immobilized in DF and the other in PF, we found that individual movements of DF, PF, supination, ulnar and radial deviation are significantly better when the wrist is immobilized in DF as concluded by Gupta A. Further, grip strength recovery and subjective assessment of pain, disability and limitation of the movements was also better as well as faster in DF immobilized patients. Radiological parameters as measured by ulnar variance, palmar tilt and radial tilt were significantly better in the DF group as compared to the PF group. The residual deformity seemed to be greater in the PF group. Although arthritic changes were not seen in any of the groups possibly in view of very short follow up. Complications were also not seen at final follow up in both groups.

According to Gupta A the reasons for the better results in the DF immobilized wrist can be understood by understanding the biomechanics of the wrist joint and fracture reduction. In the PF group the dorsal carpal ligament is taut, but cannot stabilize the fracture because of its lack of attachment to the distal carpal row. Thus the deforming forces and the potential displacement of the fracture are parallel. While in DF immobilization the volar ligament is taut which has attachment to the distal as well as proximal carpal row and tends to pull the fracture anteriorly. The deforming forces act at an angle that tends to reduce the displacement of the fracture thus preventing redisplacement. Since the wrist in extension is the optimal position for hand function and rehabilitation of the fingers, along with the fact that PF is associated with a higher rate of fracture displacement, Gupta concluded that flexion at the fracture site is important to make use of the dorsal periosteal hinge but the flexed position need not be maintained at the wrist joint.

Conclusion

It is concluded that in conservatively treated Colle's fractures, the wrist should be immobilized in position of slight dorsiflexion. Better results in DF immobilized wrist are perhaps because DF is needed for the rehabilitation of fingers, and the optimal functional position for the hand is wrist in extension.

Table I: Frykman categories

Grade	Degree of deformity
Types I/II	Completely extra-articular; complications are uncommon once anatomic alignment has been achieved
Types III/IV	Extend into the radiocarpal joint
Types V/VI	Extend into the distal radioulnar joint (DRUJ)
Types VII/VIII	Involve both radiocarpal and DRUJ articular surfaces and are highly unstable

Table II: Demerit point system (Saito)

Subjective evaluation:
Excellent (No pain, No disability, No limitation of movements) 0
Good (Ocassional pain, No disability, slight limitation of movements) 2
Fair (Ocassional pain, No particular disability if careful, some limitation of movements, feeling of weakness in wrist, activity slightly restricted) 4
Poor (Pain, disability, slight limitation of movements, activities markedly restricted) 6
Objective evaluation:
a) Residual deformity (out of the range of)

Ulnar variance	0±2mm	1
Palmar tilt	0 11±10 degrees	1
Radial tilt	23±10 degrees	1
b) Range of movement		
Dorsiflexion	<45 degree	1
Palmer flexion	<30 degree	1
Ulnar flexion	<15 degree	1
Radial flexion	<15 degree	1
Supination	<50 degree	1
Pronation	<50 degree	1
c) Grip Power		
Dominant	<1/2 Power of opposite hand	1
	< 2/3 Power of opposite hand	2
Nondominant	<1/2 Power of opposite hand	1
	< 2/3 Power of opposite hand	2
d) Arthritic changes		
None		0
Minima Irregularity of articular surface, sharpening of articular margin.		1
Moderate	Narrowed joint space, osteophytes	2
Severe	Marked Osteophytes, Ankylosis	3
e) Complications		
Nerve complications		1-2
Stiff fingers		1-2
Ruptured tendons		1-2

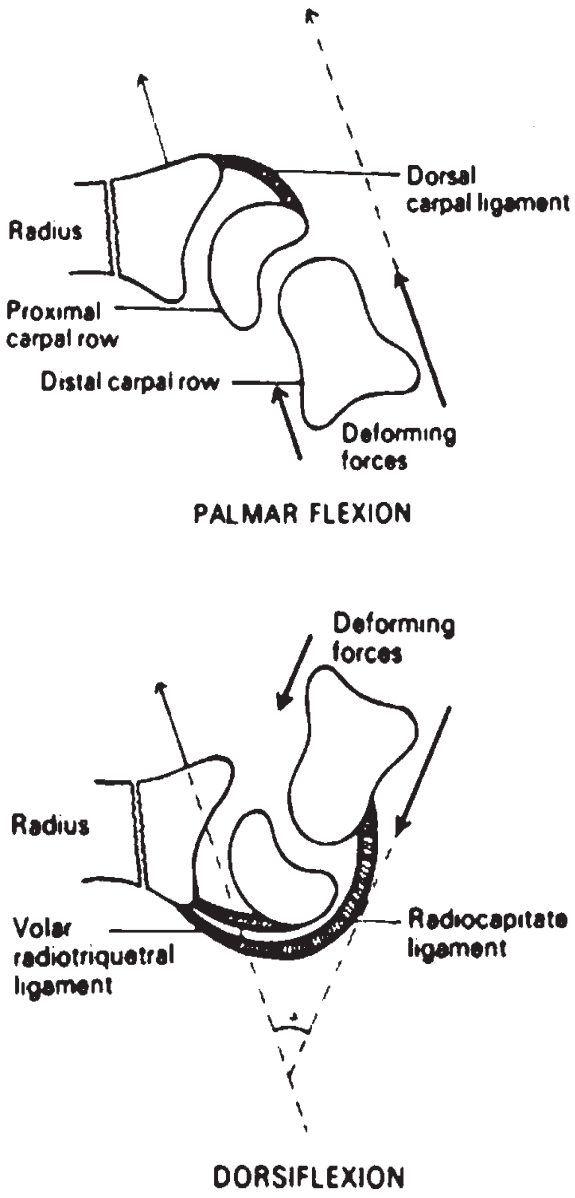

Figure 1: Modes of immobilization

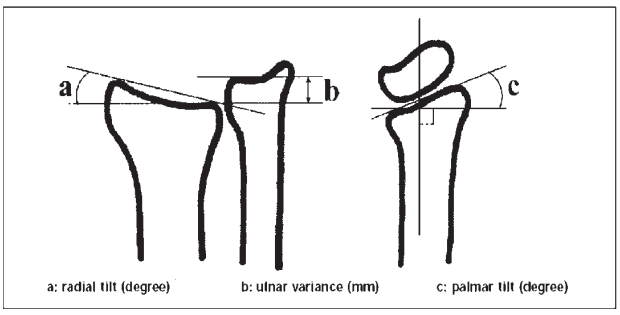

Figure 2: Measurement used for the Anatomical results

AP view

Lateral view

Figure 3: Colle's fracture (Frykman I distal radius fracture)

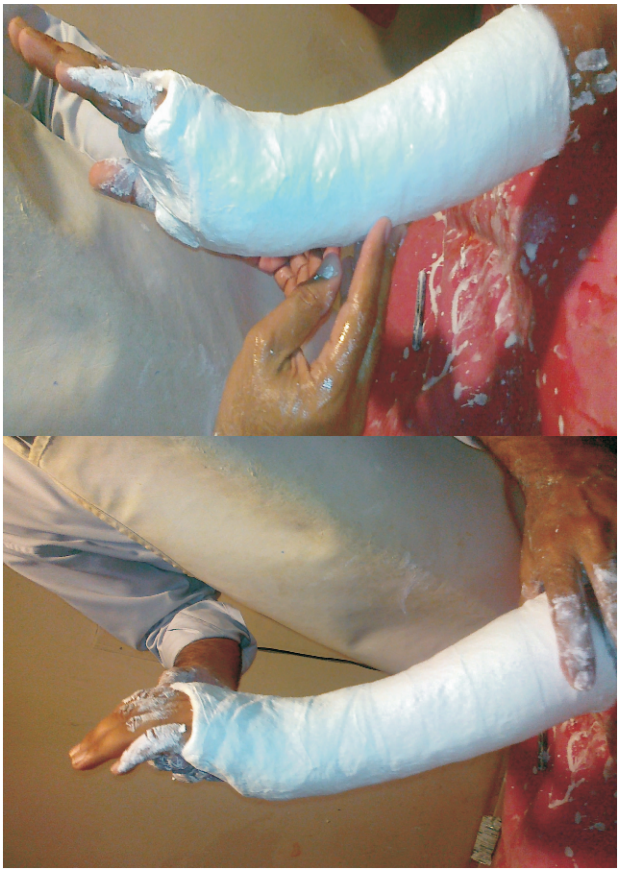

Figure 4:Cast with wrist immobilization in Dorsiflexed position

Figure 5: Result after healing of fracture in Dorsiflexed position

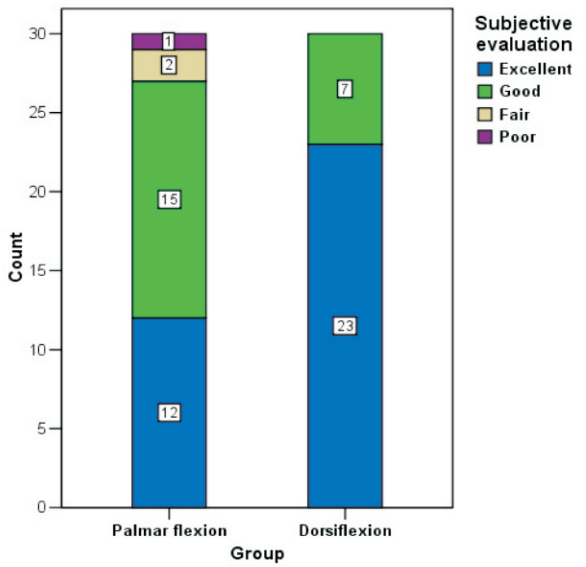

Figure 6: Subjective Evaluation

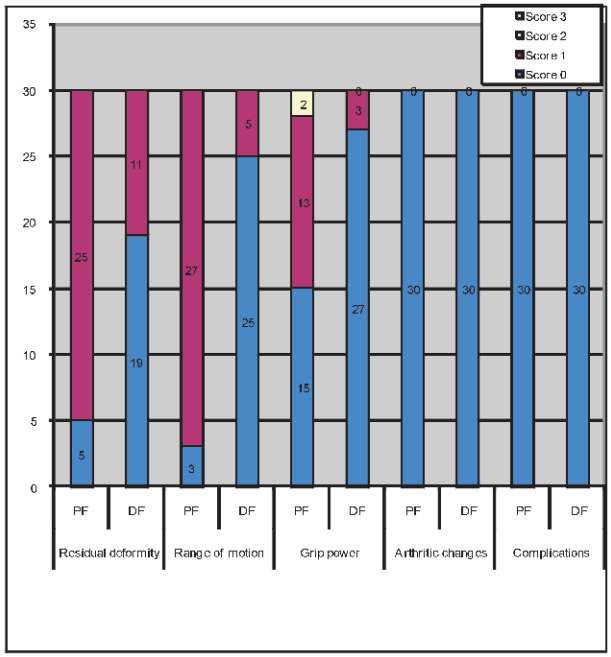

Figure 7: Objective Evaluation.

Table III: End result at final follow-up according to Saito's scoring system

	GROUPS		*P* value
	Palmer flexion	Dorsiflexion	
End Result			
Excellent	7 (23.3%)	30 (100%)	
Good	22 (73.3%)	0	
Fair	1 (3.3%)	0	0.00
Poor	0	0	
Total	30	30	

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ORIGINAL ARTICLE

Removable Subcuticular Skin Sutures in Open Appendicectomy; Surgeons Fear

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ABSTRACT

Objective: To determine the frequency of wound infection with skin closure by removable subcuticular sutures in non complicated open appendectomy wound.
Study Design: Descriptive case series
Place and Duration of Study: Department of Surgery Railway Hospital Rawalpindi, Seven months and ten days, from 1st Nov, 2009 to 10th June, 2010.
Materials and Methods: The study was carried out after taking approval from the hospital ethics committee. Seventy three adult patients of either sex admitted in department of surgery with diagnosis of acute appendicitis were included in the study by non probability consecutive sampling. All the patients were explained about the procedure and an informed written consent was obtained. Right grid iron abdominal incision centred over the Mc Burney's point was used to open the abdomen. Appendicectomy was done. In all patients subcuticular stitches by using polypropylene 2/0 were applied to close the skin. All the patients were followed on 3rd, 7th and 30th post operative day for examination of wound . Data was entered in the predesigned Proforma (annexed) for analysis.
Results: Out of 73 patients 6(8.2%) suffered from wound infection. Successful open management of the infected wounds was done. Rest of the patients had uneventful recovery.
Conclusion: Frequency of wound infection is negligible with removable subcuticular skin suture in non complicated open appendicectomy wound.

Key words: *Appendicitis, open appendicectomy, subcuticular skin closure, wound infection.*

Introduction

The vermiform appendix is a blind ended long, narrow, muscular tube arising from the posteromedial aspect of the caecum, about 1 inch (2.5 cm) inferior to the ileocaecal valve.[1,2] Acute appendicitis is one of the most common abdominal emergencies for which patients attend the emergency department.[3] Appendicectomy is the most commonly performed surgical operation all over the world.[1,4,5] Different etiological and pathological factors are considered in acute appendicitis ranging from infection of appendix to occlusion of the appendicular lumen due to fecolith, lymphoid hyperplasia, parasites and tumor.[6] Appendicitis can be divided into acute non perforated appendicitis and perforated appendicitis.

Non perforated appendicitis can be further classified into non gangrenous and gangrenous. Typically the patient of acute appendicitis presents with complaint of migratory pain to right iliac fossa, which means the pain initially starts in the epigastrium or pararumbilcal region.[7,8] Most of the times this pain is associated with anorexia, nausea and vomiting with gaurding, rigidity and rebound tenderness on palpation.[5,9,10] Diagnosis of acute appendicitis is basically done on clinical grounds. However different laboratory and radiological investigations help in supporting the diagnosis.[11,12] The surgical management of acute appendicitis is appendicectomy.[13] This can be done as traditional open appendicectomy, mini appendicectomy or by laparoscopic approach. In cases of non complicated

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appendicitis, after open appendicectomy the skin can be closed by silk,which is applied in interrupted fashion.[14] Conversely prolene or vicryl can be used to close the skin as subcuticular running suture.[15] Choice of suture material depends upon a lot of factors including the patient, tissue, anatomical area, surgeon, and economic factors. In this new era a lot of new materials have been invented which make a surgeon's job difficult to choose any material for closure.[17] Skin can be closed using sutures in interrupted, subcuticular or mattress fashion using absorbable or non absorbable materials.[18] Although the outcomes of surgical skin closure may be influenced by the indication for the procedure, the location of the surgical site, and associated Intraoperative and postoperative complications, the goal of any skin closure technique is to produce appropriate skin approximation and adequate healing with minimal wound complications, scarring, pain, and cost.[16,17]

Infections occurring in surgical incisions were initially called wound infections, but now called as surgical site infection.[7] Multiple etiological factors are involved in the development of SSI. Efforts should be made to adjust the modifiable risk factors. Cigarette smoking, old age and obesity, choice of suture material and suturing technique are known etiological factors for SSI along with the bacteria.[20]

The most common organism is staphylococcus aureus.[21] Surgical site infection is a serious issue which needs to be addressed and efforts should be made at every level starting from the ward, hospital policy and national level to prevent them.[19,20] Since appendicectomy is considered as a clean contaminated surgery, therefore most surgeons have a fear of closing the wound in a subcuticular fashion due to high risk of wound infection. This study is planned to alleviate this fear of increased risk of wound infection in non complicated open appendicectomy wound having skin closure with removable subcuticular stitches.

Materials and Methods

A descriptive study was conducted in the Department of Surgery at Pakistan Railway Hospital from 1st Nov, 2009 to 10th June, 2010. Seventy three adult patients of either sex admitted with the diagnosis of non complicated appendicitis were included in the study with convenient sampling technique. Sample size was calculated by using WHO sample size calculator taking confidence level of 95%, population proportion 5% and absolute precision 5%. All male and female adult patients admitted in surgical department who had undergone open appendicectomy for acute appendicitis and their appendix was non gangrenous and non perforated were included in the study.

Exclusion criteria

- Known diabetic patients,
- Patients with malignant disease.
- Patients with chronic liver disease.
- Patients with chronic renal failure.
- Patients on steroids.

Data Collection

All patients were explained about the procedure and an informed written consent was obtained. Right grid iron abdominal incision was used to open the abdomen. Appendicectomy was done. Peritoneum was closed by vicryl 2/0.Interrupted and continuous sutures by vicryl 1 were applied

to the internal oblique muscle and external oblique appaneurosis respectively. Sub cutaneous tissue was closed by vicryl 2/0 interrupted stitches. In all patients subcuticular stitches by using polypropylene 2/0 were applied to close the skin. All the patients received 3 doses of antibiotics (ceftriaxone and metronidazole), 1 at the time of induction of anesthesia and 2 doses post operatively at 12 hour interval. Patients were discharged on 3rd postoperative day after examination of the wound. Stitches were removed at 7th post operative day. All the patients were followed on 7th and 30th post operative day for examination. Data was entered in the preformed Proforma (annexed) for analysis.

Results

Data was analyzed by using SPSS version 10. Frequency and percentage was used for qualitative variables i.e. wound infection, pain or tenderness, swelling, redness or heat and pus discharge from the incision on 3rd, 7th, and 30th post operative day.

Out of 73 patients 6(8.2%) suffered from wound infection. Successful open management of the infected wounds was done. Rest of the patients had uneventful recovery.

Discussion

Appendicectomy is considered as a clean contaminated surgery, therefore most surgeons have a fear of closing the wound in a subcuticular fashion due to high risk of wound infection. This study was planned to alleviate this fear of increased risk of wound infection in non complicated open appendicectomy wound having skin closure with removable subcuticular stitches.Our study supports that the wound after open appendicectomy in non

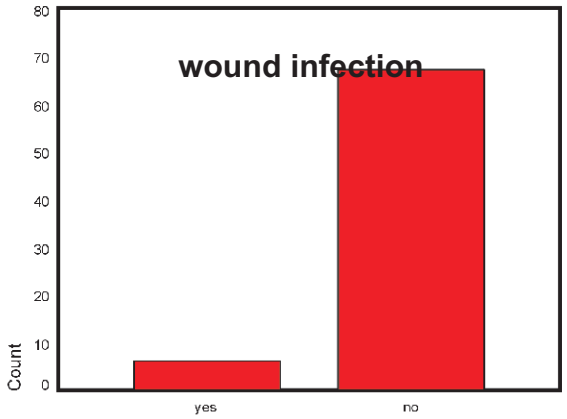

Figure 1: Frequency of Wound Infection in Study Group (n= 73).

perforated non gangrenous appendix can be closed by subcuticular removable sutures by prolene. In our study wound infection occurred in 6 patients (8.2%) only.

A randomized controlled trial was conducted by Hamid Ghaderi et al in Imam Khomeini hospital Tehran in 2010 to compare the wound infection rate after open appendicectomy in non complicated appendicitis. They took 278 patients admitted via emergency department and divided them in two groups. In one group the wound was closed by interrupted method and second group wound was closed by subcuticular prolene stitch. They did not find any gross difference in wound infection, 08 patients in interrupted group and 05 patients in subcuticular group with a p value of 0.415. So they concluded that frequency of wound infection doesn't increase with application of non absorbable suture in non open appendicectomy wounds.[15] Fashina IB, and associates in 2009 conducted a prospective study in 250 cases of appendicitis in Department of Surgery, College of Medicine, University of Lagos and Lagos University Teaching Hospital, Idi-araba, Lagos, Nigeria. They analyzed the way of presentation, management, operative findings and management

outcome in patients of acute appendicitis. They found that 08 % of the patients had wound infection.[22] It was controlled clinical trial in which they divided the patients in two groups. In one group the wound was closed interrupted method and other by subcuticular method. They concluded that there is no significant increase in the wound infection rate when wound is closed with subcuticular technique.[22]

Another study done by A. Hussain and associates to evaluate the wound infection incidence in patients with acute non complicated appendicitis and perforated and gangrenous appendicitis. This was an observational study which was carried out on 400 patients with gangrenous or perforated (50%) and simple appendicitis (50%). Both groups underwent primary wound closure. Wound infections were observed in 15 patients (3.7%), including 6 cases of simple and 9 cases of gangrenous appendicitis which was not statistically significant.[14]

Conclusion

Frequency of wound infection is 8.2% with removable subcuticular skin suture in non complicated open appendicectomy wound. The result of this study is comparable to studies conducted elsewhere in clean contaminated surgeries like appendicectomys the wound nfection is 5 10 %. So it is concluded that by using prolene in subcuticular fashion the rate of wound infection does not rise. It implies that the fear of surgeons to close the appendicectomy wounds by subcuticular closure is baseless.

Recommendations

It is recommended that the skin should be closed with removable subcuticular sutures in non complicated open appendicectomy wound as it does not increase the rate of wound infection.

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ORIGINAL ARTICLE

Adenomyosis in Hysterectomy Specimens: Prevalence and Correlation with Age, Parity and Associated Pathology

Samina Iltaf, Madiha Sajjad

ABSTRACT

Objective: To determine the prevalence of adenomyosis in hysterectomy specimens and to correlate it with age, parity and associated pathologies.
Study Design: Descriptive Study.
Place and Duration of Study: This study was carried out at the pathology department, Railway hospital, Islamic International Medical College trust Rawalpindi, from Jan 2008-Dec, 2010.
Materials and Methods: Two hundreds and four hysterectomy specimens were included in the study. Standard histological techniques were followed and at least three sections were taken from the uterine wall. Adenomyosis was diagnosed if endometrial glands and stroma were found at least one low-power field away from the endometrial-myometrial junction.
Results: Out of 204 hysterectomy specimens received in the pathology laboratory during three year study period 47(23%) had adenomyosis. The age of patients with adenomyosis ranged from 32-64 years, a significantly higher prevalence being reported in those aged 40-59 years. A high prevalence of adenomyosis was found in multiparous women. No adenomyosis was found in nulliparous women. The analysis of other pathological entities (one or more in a single specimen), associated with adenomyosis showed uterine leiomyomas in 16 (34%), endometrial hyperplasia in 4 (8.5%) and endometrial polyps in 2 (4.2%) women.
Conclusion: Adenomyosis is commonly found in multiparous women. Definite association with fibroids, endometrial polyps and endometrial hyperplasia cannot be established.

Key words: *Hysterectomy, Adenomyosis, Histopathology.*

Introduction

Adenomyosis is a common benign gynaecological disorder characterized by the heterotopic presence of endometrial glands and stroma within the myometrium, surrounded by smooth muscle proliferation.[1, 2, 3]

The definite diagnosis of adenomyosis has traditionally been made after hysterectomy. Because the junction between endometrium and myometrium in normal uteri is often irregular, the exact criteria for the histopathological diagnosis of adenomyosis are controversial.

The traditional microscopic criteria commonly used by most pathologists is the identification of endometrial glands and stroma, at least one low-power field below the basal layer of endometrium and surrounded by myometrium.[3, 4]

The degree of myometrial invasion is variable and can involve the whole uterine wall up to the serosa.

The prevalence of the condition in hysterectomy specimen varies depending on the diagnostic criteria chosen, from 8.8% to 61.5%.[4]

However with the advent of non-invasive imaging techniques e.g. transvaginal sonography (TVS) and magnetic resonance imaging (MRI), diagnosis of adenomyosis is now possible with sufficient specificity and predictive value prior to any surgical treatment.[1] Furthermore, the direct visualization of the uterine cavity offered by hysteroscopy also broadens the possibilities of reliably diagnosing the entity presurgically.[1] Thus the true prevalence of adenomyosis is still conflicting because of

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different diagnostic modalities used.

Most of the women undergoing a hysterectomy which is followed by a confirmed diagnosis of adenomyosis are in their fourth and fifth decade of life. Parity appears to be an important contributing factor as the majority (>80%) of these women are multiparous. [5,6,7]

It has been commonly found in association with other pelvic pathologies for example leiomyomas, endometrial hyperplasias and endometrial polyps etc.[2,3]

The purpose of this study is to determine the prevalence of adenomyosis in hysterectomy specimens and its correlation with age, parity and associated pathologies.

Materials and Methods

Medical records were retrieved and histo-pathological material re-examined of 204 women who underwent hysterectomy procedure in Railway hospital, Islamic International medical college, Rawalpindi in a three-year period from January 2008 to December 2010.

All specimens had been studied in the surgical pathology laboratory using standard histological techniques. At least three sections were taken from the uterine wall. Adenomyosis was diagnosed if endometrial glands and stroma were found at least one low-power field away from the endometrial-myometrial junction.[3] The histopathological assessment of all hysterectomy specimens received was reviewed by a consultant pathologist.

Other histopathological abnormalities were noted. Age and parity were recorded from the medical records of these patients. Data was analysed to study the prevalence of adenomyosis with regard to age, parity and associated pathology.

Results

Two hundred and four hysterectomy specimens were received in the pathology laboratory during three year study period. Of these, 47(23%) had adenomyosis according to the aforementioned criteria. The ages of patients with adenomyosis ranged from 32-64 years, a significantly higher prevalence being reported in those aged 40-59 years (Table. I). No adenomyosis was found in nulliparous women.

A higher prevalence of adenomyosis was found in multiparous women of parity >4 (57.4%) (Table II).

The analysis of other pathological entities (one or more in a single specimen), associated with adenomyosis showed uterine leiomyomas in 16 (34%), endometrial hyperplasia in 4 (8.5%) and endometrial polyps in 2 (4.2%) (Table III).

Table I: Age Distribution of Patients with Adenomyosis

Age group (yrs)	All patients No (%)	Patients without adeno No (%)	with adeno No (%)	Prevalence %
< 29	3 (1.5)	3 (1.9)	0	0
30 - 39	32 (15.7)	30 (19.1)	2 (4.3)	6.3
40 - 49	113 (55.4)	82 (52.2)	31 (65.9)	27.4
50 - 59	37 (18.1)	25 (15.9)	12 (25.5)	32.4
≥ 60	19 (9.3)	17 (10.8)	2 (4.3)	10.5
All ages	204	157	47	23

Prevalence per 100 patients undergoing hysterectomy in each age group.

Table II: Distribution of Parity of Patients with Adenomyosis

Parity	All patients No (%)	without adeno No (%)	With adeno No (%)	Prevalence %
0	7(3.4)	7(4.5)	0	0
1 - 4	87(42.6)	67(42.7)	20(42.6)	22.9
> 4	110(53.9)	83(52.9)	27(57.4)	20.7
	204	157	47	23

Prevalence per 100 patients undergoing hysterectomy in each parity group.

Table III: Associated Pathologic changes in Patients with Adenomyosis

Associated Pathology	without adenomyosis No (%)	With adenomyosis No (%)
Leiomyoma	56 (35.6)	16(34)
Hyperplasia	15(9.5)	4(8.5)
Endometrial Polyps	9(5.7)	2(4.2)

Discussion

The conclusive diagnosis of adenomyosis at present still depends upon postsurgical histopathological examination of entire uterus. The prevalence of adenomyosis reported in the literature varies from 8% to 38% based on unselected hysterectomies.[8] This wide variation in the reported prevalence is a result of the different diagnostic criteria used, which are based on the invasion of myometrium by glands and stroma either in terms of proportion of uterine wall thickness or absolute measurement. Owing to the great variation in uterine wall thickness, we preferred to use the former. Our study, using standard sampling techniques, found the prevalence to be 23%. This was in accordance with previously reported prevalence in most studies.[7,8,9]

Majority of our patients were between 40 to 59 years of age with maximum being in the 50-59 years age group (Table I). Adenomyosis at younger age is unusual, but higher number of adenomyotic foci in older patients may be related to their higher hysterectomy rate.[7] The peak incidence reported in most other studies is also between the 4th and 5th decades.[7,8,10]

All the adenomyotic uteri in our study were from multiparous women. No adenomyosis was identified in cases of nulliparity. These demographic trends in our study are similiar to those of hysterectomy peak incidence in the forties and a higher prevalence in multiparous women in previously published series.[7,11]

According to Israel et al., with every pregnancy, the chance of endometrial penetration into myometrium is increased.[12]

In our study leiomyomas were the commonest associated lesions (34%) [Table III]. The reported incidence of concurrent fibroids has ranged from 19% to 57%.[13,14]

Many investigators have concluded that this high prevalence reflects an association between adenomyosis and fibroids. However, majority of these studies did not analyze the incidence of fibroids in the control specimens i.e. from women without adenomyosis. Two previous studies by Shaikh and Khan. and Vercellini et al., concluded that fibroids are equally common in the specimens with and without adenomyosis.[7,15] In our study a similar pattern of prevalance of adenomyosis was observed in the presence and absence of fibroids

Endometrial hyperplasia has been noted to be more common in patients with

adenomyosis.[2, 4, 7]

Some recent studies[18] found that endometrial hyperplasia and uterine polyps were significantly associated with adenomyosis.[16,17] Other studies have not always supported this finding.[18] Hysterectomy continues to remain the single most important diagnostic and therapeutic procedure for adenomyosis, making it a retrospective diagnosis. It is equally common in women who have fibroids, endometrial hyperplasia polyps and women who do not.

Conclusion

Adenomyosis is commonly found in multiparous women.Definite association with fibroids,endometrial polyps and endometrial hyperplasia cannot be established.

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ORIGINAL ARTICLE

Oral Cavity Tumours, A Clinical Experience in a Tertiary Care Center

Muhammad Ashfaq, Mirza Khizer Hameed, Zeeshan Ayub, Kamran Ashfaq

ABSTRACT

Objective: To determine the age range, gender distribution, histological types, sites, neck node involvement, and surgery as modality of treatment in diagnosed cases of oral cavity tumours in a tertiary care centre.

Study Design: Descriptive Study

Place and Duration of Study: The study was carried out in ENT Department, CMH Rawalpindi for the duration from Dec 2008- Dec 2011.

Materials and Methods: Data of 113 biopsy proven cases of oral cavity tumors who underwent surgery at CMH Rawalpindi, were retrieved from Armed Forces Institute of Pathology's Tumour Registry and from Head and Neck Oncology Forum Registry, and were evaluated.

Results: Out of 113 patients with oral cavity tumours, 87 (77%) were male, while 26 (23%) were female, the male: female ratio being 3:1. The mean age of the patients was 59.4 years, ranging from 40 to 75 years. Site distribution of the tumours was: Tongue: 61(54%), buccal mucosa 24 (21%), floor of mouth 18 (16%), and hard palate 10 (9%). The histology of tumours showed Squamous cell carcinoma in 102 (90%) and tumours of Salivary gland origin in 11(10%). Sixty four (56%) of these patients had N_0 disease, 10 (9%) had N_1 disease, 8 (7%) had N_{2a} disease, 27 (25%) had N_{2b} disease, 3(2%) had N_{2c} disease, while 1 patient (1%) had N_3 disease. Resection of the tumour along with Supra-omohyoid neck dissection was carried out in 64 (56%) patients, while resection with radical neck dissection was done in 49 (44%) patients. Primary closure was carried out in 62 (55%) patients, while secondary reconstruction was done in 51 (45%) patients.

Conclusion: Presentation of oral cavity tumours occur at an advanced age with male preponderance in our population. Early presentation results in lesser local spread, leading to less aggressive surgical approach with selective neck dissection.

Key Words: *Oral cavity tumors, Squamous cell carcinoma, Surgical treatment*.

Introduction

Head & neck cancers are the 6th commonest cancers.[1] Making 3% of all the cancers while oral cavity cancers represent approximately 48% of them, majority being squamous cell carcinoma (SCC).[2] Head neck cancers are considered to be the commonest cancers in countries like India, Pakistan, Bangladesh etc. They usually occur in middle aged and old people. Major risk factors are tobacco and alcohol intake.[3] And both have a synergistic action.[4] In South East Asia its incidence is high due to betel quid chewing.[5] Generally incidence is 2-3 times higher in the males.[6] But now almost equal gender distribution may be seen in many developed countries.[7] Almost 90% of these tumours are squamous cell carcinomas, while rest comprise of salivary gland tumours, sarcomas and melanomas.[8] Commonest site is the tongue,[9] usually the lateral border, followed by the buccal mucosa and floor of mouth. Commonest presentation is of a non-healing ulcer. In 30-80% of the patients, cervical lymph nodes may be involved on presentation.[10]

Over the years the modalities of treatment has not significantly changed. Surgery and radiotherapy alone are the treatment modality in the early cases, while combined therapy with surgical resection followed by radiotherapy or chemo-radiotherapy is the standard treatment modality in advanced disease.[11] Cervical lymph node metastasis is a main determinant in the staging and the choice of treatment modality.[12]

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Consequently, neck dissection forms an integral aspect of the surgical treatment of Oral Squamous Cell Cancers, and has evolved from radical to more selective and functional procedures with our improved understanding of the distribution of regional metastasis.[13] Recent studies have shown that selective neck dissection is oncologically safe for head neck cancers with clinically negative node necks.[14] Successful reconstruction is mandatory for the success of any surgery for oral cancers.[15]

A descriptive study was carried out in ENT Department Combined Military Hospital Rawalpindi to determine the age range, gender distribution, histological types, sub-sites, neck node involvement, and surgery as modality of treatment in diagnosed cases of oral cavity tumours for the duration from December 2008 to December 2011.

Materials and Methods

Data of 113 biopsy proven patients of oral cavity tumours, operated upon, in the duration from December 2008- December 2011, was retrieved from AFIP Tumor Registry and Head and Neck Oncology Forum Registry and was evaluated.

The data was entered in SPSS version 12 and the cases were evaluated for the age of patient, gender, histology of tumor, tumor site, neck node involvement, and the surgical procedure done.

Results

Male to female ratio was found to be 3:1 as inferred from Figure 1.The mean age of presentation was found to be 59.4 years ranging from 40-75 years.

With regards to site, more than half of the patients had tumors of tongue, followed by tumors of buccal mucosa, tumors of floor of mouth and tumors of hard palate respectively as shown in Table I.

The most common histological diagnosis was Squamous Cell Carcinoma followed by salivary gland tumours as shown in Figure 2.

Neck nodes involvement in these 113 patients is shown in Table II.

All these patients were staged according to TNM classification. Sixty four (56%) patients were grouped into early stage cancer of the oral cavity (Stage I & II), while 49 (44%) were grouped as advanced disease (Stage III & IV). Resection of the tumour along with Supraomohyoid neck dissection was carried out in 64 (56%) patients, while Resection with Radical neck dissection was done in 49 (44%) patients.

Primary closure was carried out in 62 (55%) patients, while secondary reconstruction had to be carried out in 51 (45%) patients. With regards to secondary reconstruction, radial free forearm flap reconstruction was done in 27 (24%) cases, pectoralis major flap reconstruction in 14 (12%) patients, while osseo-cutaneous fibula flap reconstruction was carried out in 10 (9%) patients.

Discussion

Oral cancer is the eighth commonest cancer in the developing countries and sixteenth commonest in developed countries. It is diagnosed usually at an advanced stage and approximately 30% of the patients delay seeking help for more than 3 months following the self discovery of symptoms. In Pakistan, oral cavity cancers are found to be the leading tumours.[17,18] In our study the mean age of the patients was found to be 59.4 years. Almost similar mean age has been shown in another study.[19] And it is probably due to prolonged exposure of the mucosa to tobacco, alcohol etc. But now, the

incidence is increasing among relatively younger population. In our study the male to female ratio was 3:1 with 77% male and 23% female patients. Carvalho et al also showed a similar gender distribution in the developing countries.[7] As ours is a developing country, the same pattern prevails. In our study, the tongue was found to be the commonest site involved, followed by the buccal mucosa and floor of mouth respectively. A study carried out by Razfer .et .al noted that 43.9% tumors involved the tongue, 27.3% involved the floor of mouth, 24.2% involved the alveolus and buccal mucosa while 3.8% involved hard palate.[17] Another study also showed tongue (58%) as the leading site of oral cancers.[9] Our results also showed a higher incidence of tongue tumours but with a higher percentage, and a relatively higher incidence of buccal mucosa tumours. Similarly, we had a higher incidence of hard palate tumours. Probably this slight difference is because of betel quid chewing and Naswar (Oral snuff) placement.

In our study commonest histological type of tumours was squamous cell carcinoma and it is similar to data given in a study by Bhurguri et al.[17] Our results showed palpable cervical lymph nodes in 44% of the patients which are similar to a study by Fukano et al.[10] Thus 56% patients presented to us at an earlier stage leading to expectation of a better prognosis as shown in study by Elwood & Gallagher.[20]

In patients with early stage disease, having N_0 neck, tumour resection was carried out along with Supra-omohyoid neck dissection. It is very logical because of much extensive lymphatic network draining the oral cavity. In rest of the cases with advanced disease, the surgical resection was carried out along with radical neck dissection. Although there is recent trend for selective neck dissection even in advanced cases, but in our center, we adhere with radical neck dissection for better prognosis in advanced cases.

Conclusion

Presentation of oral cavity tumours occur at an advanced age with male preponderance as occurs in other developing countries. Early presentation results in lesser local spread, leading to less aggressive surgical approach with selective neck dissection.

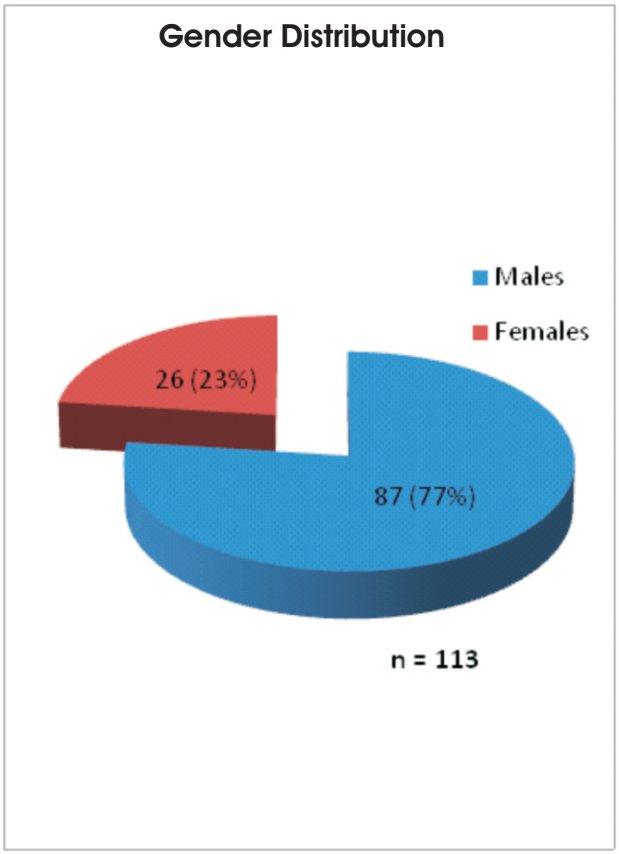

Figure 1: Gender distribution in patients with Oral Cavity Tumours

Table I: Site distribution in patients with Oral Cavity Tumours

Site Distribution (n= 113)		
S. No	Site	No. of Patients
1.	Tongue	61(54%)
2.	Buccal Mucosa	24 (21%)
3.	Floor of Mouth	18 (16%)
4.	Hard Palate	10 (9 %)

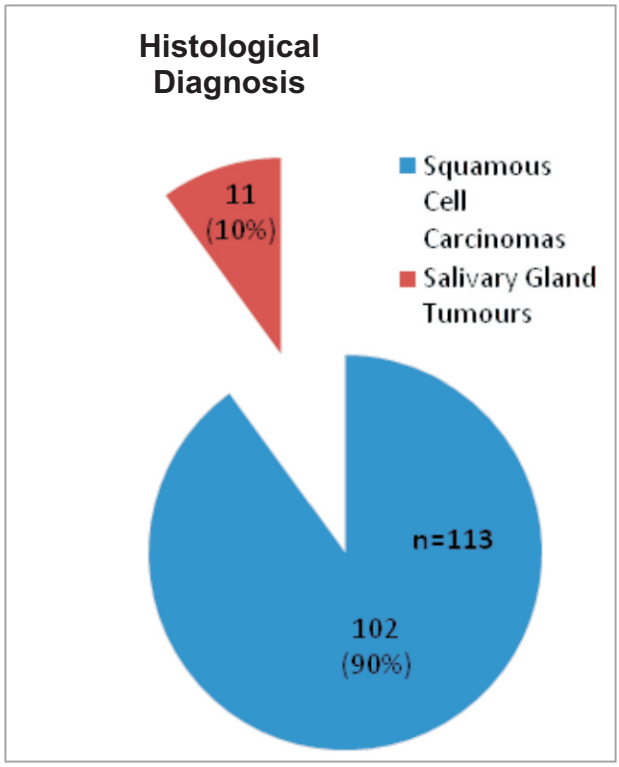

Figure 2: Histology of Oral Cavity Tumours

Table II: Incidence of Cervical Nodes in Oral Cavity Tumours

Neck Node Involvement (n= 113)		
S. No	Level	No. of Patients
1.	N0	64 (56%)
2.	N1	10 (9%)
3.	N2a	8 (7%)
4.	N2b	27 (25 %)
5.	N2c	3 (2%)
6.	N3	1 (1%)

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