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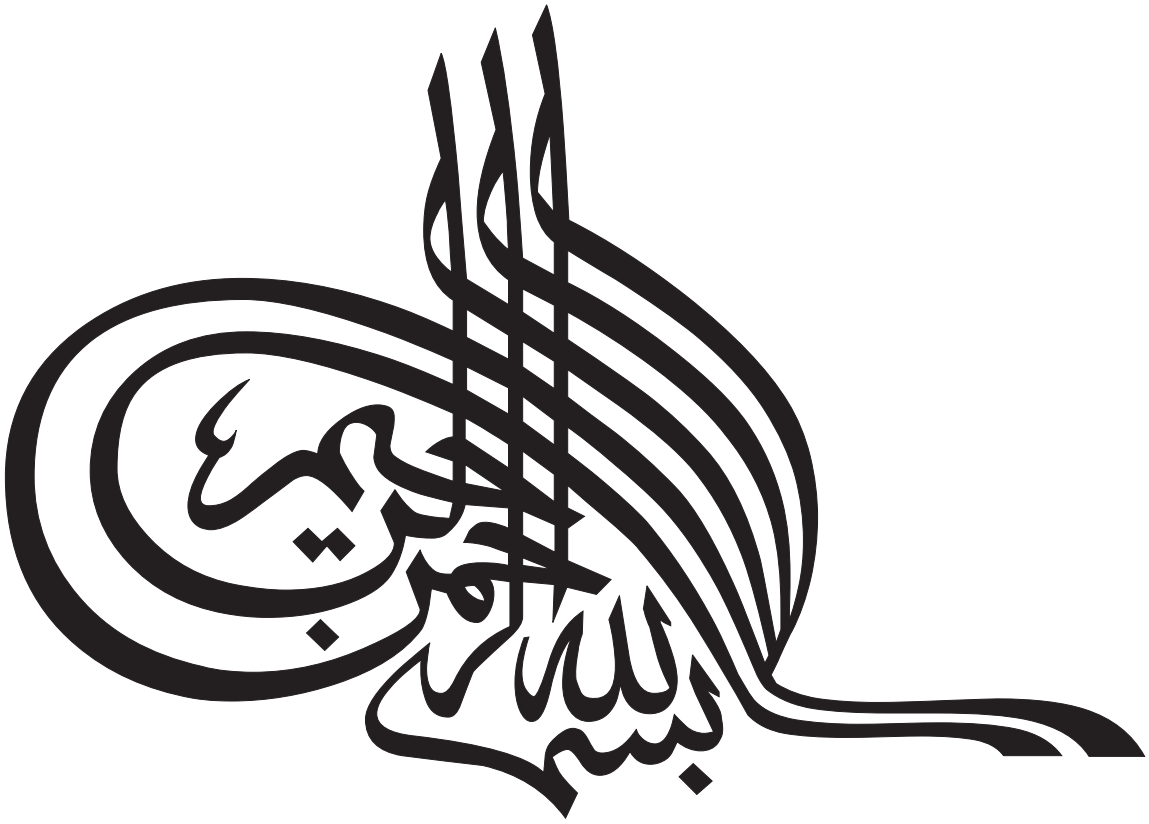

In the name of Allah, the most Beneficent, the most Merciful

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EDITORIAL

Headache who to be investigated?

Prof Muhammad Iqbal

Headache is such a common disorder that its lifetime prevalence can safely be presumed to 100% in any population. In fact this is the commonest pain for which patients consult a doctor. Humans are so much annoyed with this pain that they label every difficult problem as a "headache". One of the Punjabi proverb says, "bigger the head, bigger are the headaches" meaning people with more responsibilities have more problems to solve.

Human beliefs about headache and its treatment have been very interesting and human relation with headache dates back to ancient times.[1] About 7000 BC, people believed that headache occurred because of entrance of demons and evil spirits in head. They practiced trepanation (Making a hole in skull bone) to release these spirits from head. Neolithic skeletons have been found to have holes in their skulls. Interestingly, at least some of these patients survived because of the evidence that some of these skulls had new bone formation at the edges of these holes. Trepanning seems to continue till seventeenth century because in 1660, William Harvey suggested trepanation to a patient who had intractable headache. Around 1200 BC Egyptians would bind a crocodile made of clay tightly around the head of headache patients. The linen with which this crocodile was tied displayed names of gods on it. It was believed that these gods would cure the headache. Around 400 BC, Hippocrates not only described aura of migraine as flashing light preceding headache, but also defined some of its triggering factors such as intercourse and exercise. He also believed that vapours arising from bile in the stomach rise to head to cause headache and that vomiting out of this bile relieve the headache.

In 12th century Hildegard of Bingen, a nun wrote a very vivid account of her headache. She also made drawings of her visual aura.[1] These manuscripts show that she was suffering from classical migraine.

Headaches are broadly classified into three broad categories [2]

- primary headaches
- secondary headaches and
- cranial neuralgias & other facial pains.

Most important in primary headaches are, among others, migraine, cluster headache and tension type headache. Secondary headache is because of multiple causes, most common being intracranial tumors, aneurysms and giant cell arteritis. Fortunately most of headaches are primary[3], they are benign albeit very disturbing and annoying. They do not require extensive investigation. On the other hand, one should always remember that headache with serious sequel do occur. So which headache should be investigated is a very important question.

Why this question becomes important is because of following facts:

- Headache being globally common, practically every human being will require investigation at some stage of life, if not filtered.
- Investigations for headache are quiet costly so investigating every headache will not be a cost effective practice.
- Investigations are unrewarding for

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most of primary headaches making it a futile exercise

- Investigations per se are not free of harm, some of hazards are exposure to radiation, allergic reaction to contrasts, overdose of sedating drugs in case of claustrophobic patients undergoing MRI etc.

US headache consortium has laid down following principles for investigation of headache.[4] These principles are based on consensus, not any evidence.

1. Testing should be avoided if it is not going to change the management of patient
2. Testing is not recommended if patient is no more likely than general population to have a significant abnormality
3. Exceptions can be made for individuals that are disabled for fears of serious pathology , even in the absence of known predictors of abnormalities on neuroimaging studies

Therefore people have identified certain features in history and physical examination which will help to identify patients who need further investigation. Some of these features are thunderclap headache, headache with atypical aura, new onset headache in patients >50 years or <10 years, persistent morning headache with nausea, progressively worsening headache[5] headache associated with postural change, headache in patients with cancer or HIV infection, history of head or neck injuy or weight loss. Some abnormal physical findings like scalp tenderness, pyrexia, nuchal rigidity, pailloedema, abnormal mental status and neurological findings also warrant for further investigation.[5,6,7]

Apart from all above, there are at least two more very strong indications for investigation of headache. They are patient's overwhelming concerns about his headache that are resistant to reassurance and physician's sixth sense feeling about probability of some serious underlying disorder.

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ORIGINAL ARTICLE

A Study of Variations in Human Ascending Aortic Fold

Amer Qayum, Tahzeeb ul Hassan, Tassaduq Hussain

ABSTRACT

Objective: To study the variations in gross appearance of ascending aortic fold, and relationship of vertical height of middle of fold to vertical height of heart and to the mean width of the fold.

Study Design: This was a cross sectional study.

Place and Duration of Study: Department of anatomy, Rawalpindi Medical College, Rawalpindi, from Jan 2010 to Dec 2010.

Materials and Methods: The present study was carried out on 24 hearts obtained from the dissection room of Rawalpindi Medical College, Rawalpindi. All the cases cadavers available during the study period were included in the study. The ascending aorta was studied with respect to its length and presence of fold in each of the specimens. The direction of the fold was noted for the classic oblique form and other variations.

Results: The fold was present in all the specimens. It was oblique in 13 cases, horizontal in 6, oval in 2, vertical oblique in 2 and vertical horizontal in 1 individual. The vertical height of middle of fold was inversely proportional to vertical height of the heart and directly proportional to the mean width of the fold.

Conclusion: The present study provided new dimension and observation that the vertical height of the middle of fold and vertical height of heart are inversely proportional to each other. Vertical height of the middle of fold and mean width of the fold are directly proportional to each other.

Keywords: *Ascending Aortic fold, Vertical height of heart, Mean width of aortic fold.*

Introduction

The ascending aortic fold was described for the first time by Rindfleisch (1984) as a fibrofatty epicardial fold, semilunar in shape, 1 to 3 cm long, 2 to 5 mm wide and directed obliquely across the middle of anterior surface of ascending aorta. He concluded that the fold enhanced the elasticity of visceral pericardium.[1] Epicardium is the visceral layer of pericardium. Ascending aorta is enclosed in a sheath of serous pericardium. Serous pericardium has parietal and visceral layer. Parietal layer lines the fibrous pericardium.[2,3] Accessory thyroid tissue was detected by Swarts and Thompson (1911) in sub-epicardial preaortic fat.[4]

The term of periaortic fat pads was used by Gross (1921) for the ascending aortic fold. He observed that these fat pads increase with age and myocardial pathology. He concluded that this progressive deposition of fat was the result of collateral enlargement of blood vessels in the fat pads to lessen the effect of coronary insufficiency.[5] It was demonstrated by Woodruff that opening of vasa vasorum of aorta was present beneath the fat pads.[6] Vasa vasorum are contained in adventitia of large arteries.[7,8] It was reported by David J.Davis (1927) that ascending aortic fold was constant in location, form and size. He suggested the name of periaortic fat bodies for the fold.[9] Epicardial fat pad was another name used by Robertson (1930) for the ascending aortic fold. He was of the opinion that the fold carried an arterial network to the vasa vasorum of aorta and a site of anastomosis between the coronary arteries.[10] The fold was found by Parke and Michels (1966) in adults, children and fetuses and was called by them as aortic ridge. They proposed that it relieves pressure and friction between aorta and right auricle.[11] A relatively recent study was carried out by G.T Lebona (1993) in South Africa. He proposed the name of ascending aortic fold. The fold has not been mentioned in the recent textbooks of anatomy. He observed that apart from classic oblique form other

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varieties of ascending aortic fold also exist.[12,13] Different views were given about the structure of ascending aortic fold. The knowledge about the fold was limited. Moreover no more studies could be found to confirm or refute the work done by G.T Lebona, which needs to be studied and explored more. This inspired me to work for this difficult task and to conduct the present study.

Materials and Methods

This was cross sectional study carried out in Rawalpindi Medical College from Jan 2010 to Dec 2010.

All the cadavers dissected during this period were used for this study. For the data collection a structured questionnaire was developed mentioning the important variables about Length, width, position, type's and shapes/axis of fold etc. Data was analyzed by using Microsoft Excel and Statistical package for social sciences version 17.Mean and standard deviation were calculated; cross tabs were done and mentioned in tables and graphs.

The material consisted of 24 hearts obtained from the dissection hall of Rawalpindi Medical College, Rawalpindi.

Obese adult, putrefied and macerated specimens, gross pathological findings like aortic aneurysms, myocardial infarction and congenital anomalies were not included. The ascending aorta was studied with respect to its length and presence of fold in each of the specimens. The direction of the fold was noted for the classic oblique form and other variations. Mean width of the fold was calculated by taking the average of maximum and minimum width in each of the specimens. The vertical height of the middle of fold was measured from middle of its upper border to its lower border. Vertical height of the heart was measured from middle of the upper border of fold to the inferior border of heart. Height of the fold as percentage of height of heart was also calculated in each of the specimen. A comparison of the vertical height of the heart and vertical height of the fold was made in each of the specimen. Similarly a comparison of mean width and vertical height of the middle of the fold was made.

Results

The ascending aortic fold was present in all the 24 specimens. It was obliquely oriented in 13 specimens as shown in figure 1. Horizontal variety was present in 6 specimens as shown in figure 2. The fold was oval in 2 hearts as shown in figure 3. In remaining 3 specimens combination of axis was observed. It was vertical oblique in 2 specimens as shown in figure 4. Vertical horizontal form was seen in only 1 heart as shown in figure 5. The frequency of variations of ascending aortic fold is shown in table 1. Length of ascending aorta ranged between 4.40 to 5.40 cm. The mean length of ascending aorta came out to be 4.90cm as shown in table 1. The mean width of the fold ranged between 0.19 cm and 1.07 cm. The mean of the mean width was 0.41 cm with SD of 0.17 as shown in table 1.The vertical height of the middle of fold ranged between 0.21 cm to 0.82 cm, with mean value of 0.39 and SD of 0.14 as shown in table 1.The vertical height of the heart ranged between 7.80 cm and 9.82 cm with mean value of 8.66 cm and SD of 0.62 as shown in table 1. Height of the fold as percentage of height of the heart ranged from 2.23% to 8.81% with mean of 4.61% as shown in figure 6 and table 1. The vertical height of the fold decreased as the height of the heart increased as shown in figure 7. The vertical heights of the middle of fold and mean width of fold generally remained in the similar ranges as shown in figure 8.

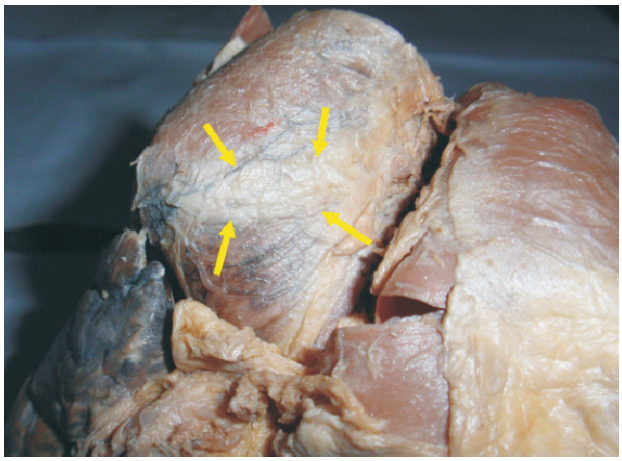

Figure 1: Anterior aspect of ascending aorta showing oblique type of ascending aortic fold (yellow arrows).

Figure 2: Anterior aspect of ascending aorta showing horizontal type of ascending aortic fold (yellow arrows).

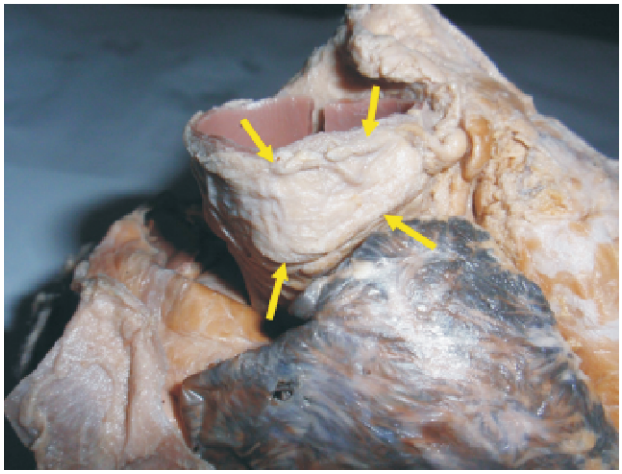

Figure 3: Anterior aspect of ascending aorta showing oval type of ascending aortic fold (yellow arrows).

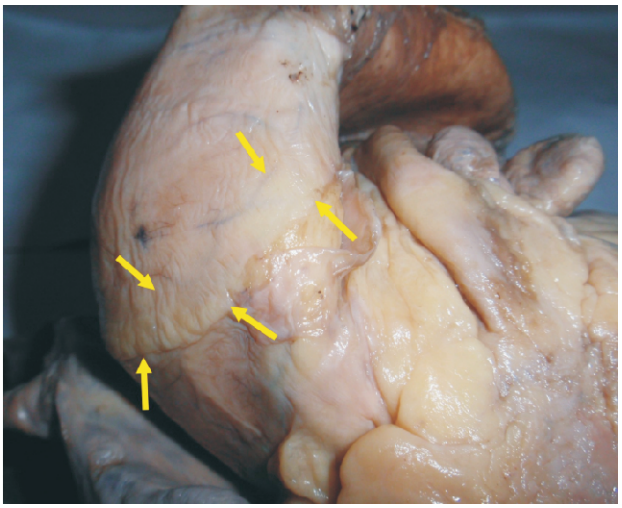

Figure 4: Anterior aspect of ascending aorta showing vertical oblique type of ascending aortic fold (yellow arrows).

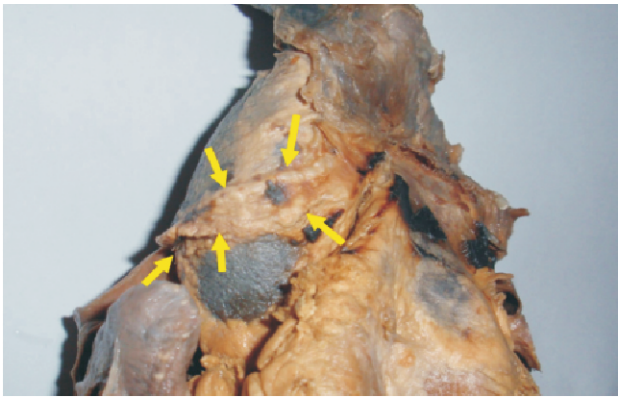

Figure 5: Anterior aspect of ascending aorta showing vertical horizontal type of ascending aortic fold (yellow arrows)

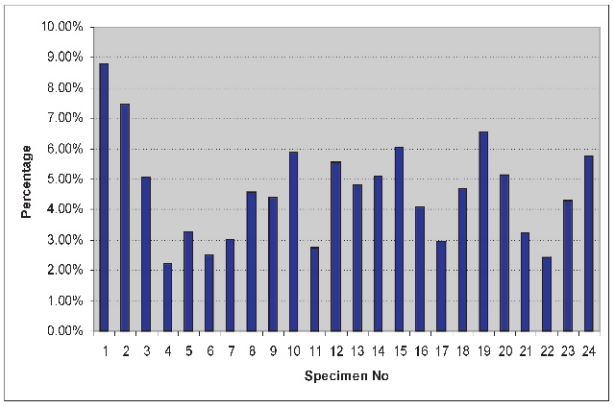

Figure 6: The height of the fold as percentage of height of the heart.

Table I: Gross parameters of ascending aortic fold

Specimen No	Inclination of the aortic fold	Max Width (cm)	Min Width (cm)	Mean Width (cm)	Vertical Height of middle of the fold (cm)	Vertical Height from middle of the fold to inferior border of heart (cm)	Height of Fold as percentage of Height of the Heart	length of the fold (cm)	Length of Ascending Aorta (cm)
1	Vertical Oblique	1.3	0.83	1.07	0.82	9.31	8.81%	3	5.3
2	Oval	0.62	0.34	0.48	0.6	8.05	7.45%	2.2	4.8
3	Oblique	0.45	0.25	0.35	0.4	7.9	5.06%	3.51	4.8
4	Vertical Oblique	0.25	0.13	0.19	0.21	9.41	2.23%	4	4.9
5	Horizontal	0.6	0.27	0.44	0.32	9.82	3.26%	1.71	5.1
6	Vertical Horizontal	0.5	0.16	0.33	0.21	8.42	2.49%	5	4.7
7	Oblique	0.55	0.18	0.37	0.27	8.95	3.02%	2.7	5
8	Oblique	0.42	0.23	0.33	0.37	8.1	4.57%	3.3	5.1
9	Oblique	0.7	0.28	0.49	0.4	9.1	4.40%	4.2	5.2
10	Horizontal	0.35	0.19	0.27	0.47	8	5.88%	3.7	4.7
11	Horizontal	0.52	0.17	0.35	0.26	9.5	2.74%	2.8	4.4
12	Oblique	0.29	0.14	0.22	0.44	7.9	5.57%	2.1	4.9
13	Oblique	0.58	0.31	0.45	0.41	8.5	4.82%	2.6	4.5
14	Horizontal	0.71	0.37	0.54	0.42	8.2	5.12%	3.1	5.1
15	Oval	0.59	0.22	0.41	0.51	8.4	6.07%	2.5	5
16	Oblique	0.61	0.24	0.43	0.35	8.6	4.07%	3	5.2
17	Oblique	0.32	0.2	0.26	0.27	9.1	2.97%	2.3	4.5
18	Horizontal	0.8	0.39	0.60	0.43	9.2	4.67%	2.7	5.4
19	Oblique	0.61	0.33	0.47	0.55	8.4	6.55%	2.3	5
20	Oblique	0.44	0.26	0.35	0.41	7.95	5.16%	2.6	4.8
21	Horizontal	0.58	0.3	0.44	0.31	9.6	3.23%	1.9	4.7
22	Oblique	0.26	0.15	0.21	0.22	9.1	2.42%	2.5	4.9
23	Oblique	0.51	0.18	0.35	0.37	8.6	4.30%	2.8	4.6
24	Oblique	0.47	0.29	0.38	0.45	7.8	5.77%	1.9	4.9
Mean		0.54	0.27	0.41	0.39	8.66	4.61%	2.85	4.90
SD		0.22	0.14	0.17	0.14	0.62		0.79	0.26

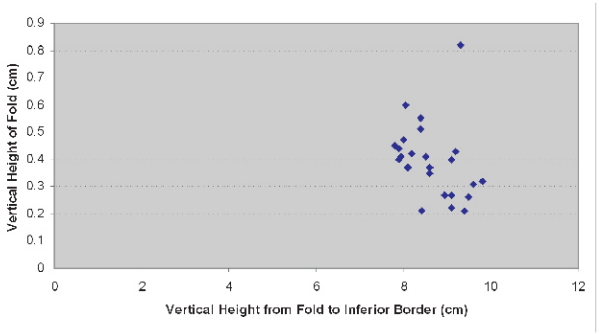

Figure 7: Scatter graph showing the comparison of vertical height of the fold and the vertical height of the heart.

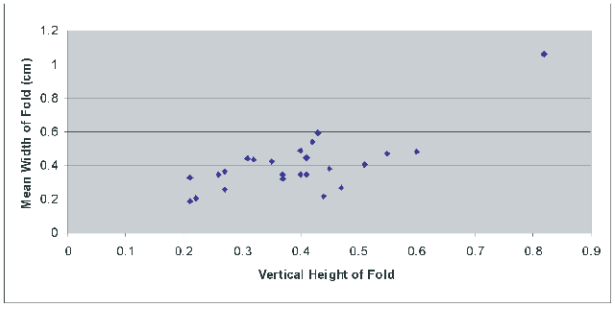

Figure 8: Scatter graph showing the comparison of vertical height of middle of fold and its mean width.

Discussion

The present study has shown that the ascending aortic fold is a constant feature and confirmed the findings of previous workers.[1,9,11,12] During the present study mean length of aorta (4.90cm) was approximately the same as given in literature.[14] Earlier the literature identified only oblique semilunar form of the ascending aortic fold. Later on, it was reported by G.T Lebona that a wide variation in gross anatomy of fold exists.[12,13] He observed classic oblique form in 51 out of 90 specimens. Horizontal form was seen in 17, vertical form in 5 and oval in 2 hearts. In the remaining 15 hearts the fold was seen in the form of a combined axial pattern. It was horizontal-oblique in 4, vertical-oblique in 6, vertical-horizontal in 3, vertical-horizontal-oblique in 1 and oval-oblique in 1. The present study has confirmed that variations are present in the gross anatomy of ascending aortic fold. Classic oblique form was present in 13 out of 24 hearts. It was oval in 2 hearts and horizontal in 6 hearts. The remaining 3 hearts showed a combination of axis. The fold was vertical-oblique in 2 and vertical-horizontal in 1 of the hearts. However the variations noted in the present study were not as wide as seen by G.T Lebona in Black South Africans. Thus the present study is the first to agree with the work of G.T Lebona. During the present study it was found that height of the fold as percentage of the height of heart ranged from 2.23% to 8.81% with mean value of 4.61%. A trend was noted that as the vertical height of heart increase there was no increase in vertical height of middle of fold, rather it decreased. To our knowledge no such study has been carried out before this.

The present study provides new dimension and observation that the vertical height of the middle of fold and mean width of the fold are directly proportional to each other.

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ORIGINAL ARTICLE

Presentations of Polycystic Ovarian Disease- Study at Tertiary Care Hospital

Nabila Amin, Shazia Chohan, Farhat Kareem

ABSTRACT

Objective: To identify the different clinical and biochemical presentations of patients having polycystic ovarian syndrome.

Study Design: A descriptive observational study.

Place and Duration of Study: This study was carried out at Obstetrics and Gynaecology department of CMH Rawalpindi, from October 2010 to Sept 2011.

Materials and Methods: This observational study was conducted to identify the different presentation of patients suffering from polycystic ovarian syndrome. Seventy five cases of polycystic ovarian syndrome who reported in OPD were selected for the study.

Results: The patients mostly presented between 20-30 years of age with symptoms of oligomenorrhea, infertility and hirsutism. Ultrasonography showed the morphology of polycystic ovary and deranged FSH, LH and testosterone levels.

Keywords: *Polycystic ovarian syndrome, Oligomenorrhea, Infertility, Hirsutism.*

Introduction

Polycystic ovarian syndrome (PCOS) is associated with reproductive, metabolic and psychological dysfunction and affects 4-18% of women in reproductive age group.[1] It is the most common endocrinopathy affecting women of reproductive age.[2] There is an increased risk of diabetes, hypertension, metabolic syndrome, and endometrial carcinoma. [3] PCOS adversely affects the female reproductive health leading to infertility and miscarriages.

Diagnosis of PCOS is a challenge for the clinicians and with availability of more advanced diagnostic tools the prevalence has seen to be increased because most of the cases remain undiagnosed clinically.[4] PCOS is a frequent condition in women of reproductive ageand has associated metabolic dysfunction.[5] This condition also has serious psychological implication as well.[6] The usual manifestations include irregular menses, androgen excess and obesity.[7] The aim of the present study is to highlight the different symptoms and signs with which the patients reported in the gynaecology and obstetrics department of Combined Military Hospital, Rawalpindi over a period of one year.

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Materials and Methods

This descriptive study was carried out at Obstetrics and Gynecology department CMH Rawalpindi. Seventy five cases of polycystic ovarian syndrome were selected for the study. Detailed menstrual history of the patient was taken. Pelvic examination of all the married patients was carried out in all the patients. Ultrasonography pelvis was carried out in all the patients. Hormonal levels (FSH, LH, Prolactin, Testosterone, Estradiol) were also carried out. Baseline blood chemistry was done in all cases.

Patients who presented with complaints of menstrual irregularities, infertility, hirsutism and obesity were included in the study. Patients having menstrual irregularities due to other causes, like menorrhagia, and other causes of infertility, like male causes, tubal occlusion, were excluded from the study.

Results

Out of the 75 women selected for the study

51 (68%) had raised LH and FSH ratio while testosterone was mildly raised in 20 patients (Table II). On ultrasonography polycystic ovaries were found in 49 (65%) patients (Table II). Most common presenting symptom wasoligomenorrhoea which was present in 75% cases (56 patients) (Table I). Fifty six perecent (42 patients) patients had infertility while hirsutism was present in 53% (39 patients) cases (Table I). Most of the patients presented in 20-30 years age group. 30 patients (40%) were found to be obese (Table I).

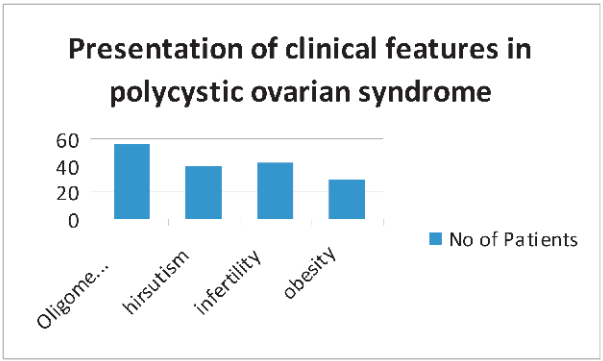
Table I: Presenting features of patients with PCOS

Presenting feature	Number of patients	PERCENTAGE (%)
Oligomenorrhea	56	75
Hirsutism	39	52
Primary Infertility	42	56
Obesity	30	40

Table II: Investigations of patients with PCOS

Investigations	Number of patients	Percentage (%)
Polycystic ovary on USG	49	65
Raised LH/FSH	51	68
Raised Testosterone	20	27

Figure 1:



Discussion

It was in 1935 that Stein and Leventhal originally described the polycystic ovarian syndrome. PCOS is diagnosed using the Rotterdam criteria,[8] which declares that when at least two of the following three features are present the patient can be labeled as having PCOS:

- oligomenorrhea/ anovulation
- hyperandrogenism
- Polycystic ovaries

In the study Rotterdam criteria was used for diagnosing the patients of PCOS. The studyshows that the most common presenting symptom was oligomenorrhoea, this finding is similar to other studies carried out and was of almost similar level to the one reported in US study.[9,10] Similarly infertility was a very common symptom being present in 65% of our patients. This shows that married women tend to report for their concern for infertility and are subsequently diagnosed as having PCOS. The worldwide incidence of patients with infertility having PCOS is about 75%.[11] Hirsutism is again a very common symptom in patients of PCOS, it being present in 35% patients in Chinese population.[12] Obesity is more commonly present in women with PCOS of Hispanic, black and white origin while its incidence is lower in women of Mediterranean descent.13Hyperandrogenism was exhibited by the deranged levels of FSH, LH and testosterone as in other studies these levels play an important role in diagnosis of

PCOS.[14]Transvaginal ultrasonography carried out showed the presence of 12 or more follicles measuring 2-9 mm in diameter and increased ovarian volume (more than 10cm3) in 65% patients, which is one of the features of PCOS according to Rotterdam criteria. The patients typically presented in 3rd decade of life.

Conclusion

It can be concluded from this study that patients present with menstrual cyclical disturbances, infertility with and without menstrual disturbances, associated hirsutism and obesity, ultrasonographicfeaturesandhormone level estimation play pivotal role in diagnosis of PCOS.

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ORIGINAL ARTICLE

The Role of Early Mobilization in the Prevention of Post Operative Wound Infection after Lower Extremity Orthopedic Surgeries

Syed Shakil-ur-Rehman, Sohail Iqbal Sheikh, Khalid Farooq Danish

ABSTRACT

Objective: To determine effects of early mobilization in reducing post operative wound infection after lower extremity orthopedic surgeries.

Study Design: Quasi Experimental Study.

Place and Duration of Study: This study was carried out at department of orthopedics Pakistan Railway General Hospital Rawalpindi, from August 2010 to July 2012.

Materials & Methods: Eighty nine patients who had undergone lower extremity surgery were conveniently placed into early mobilization group A and delayed mobilization group B. All the patients mobilized within first week after surgery were included in group A, and those mobilized after one week of surgery were included in group B. Patients' wound infection was defined as local redness, pain, and pus discharge within three weeks after surgery. Results were analyzed using Chi-square test with SPSS-16.0.

Results: Minimum age of patients in this study was 10 and maximum 90 years with a mean of 45 in group A and 44 in group B. The total number of the cases of wound infections was 6 (6.74%); 2 (4.4%) in the early mobilized group and 4(9%) in the delayed mobilized group. Statistical analysis showed significant difference in the number of wound infections in both groups and the result for group A was statistically more significant (p value=0.03) as compared to result) for group B (p value =0.06)

Conclusions: We conclude that after lower extremity orthopedic surgeries, early mobilization is needed, as it significantly reduces the postoperative wound infection rates, and early mobility is achieved.

Key words: *Lower extremity orthopedic surgeries, Early mobilization, Post wound Infection*

Introduction

The risk of postoperative complications is associated with every orthopedic surgery. The wound infection is one of the major complications that could occur after any orthopedic surgery and always threats the patient's prognosis by delaying recovery and increasing hospital stay.[1] It has been estimated that each patient with a surgical site infection will require an additional 6.5 days in hospital, which results in the doubling of hospital costs associated with that patient.[2]

The complex of many factor are responsible for the development of the wound infection after orthopedic surgery.[3] The contributing factors for the development of postoperative wound infection after orthopedic surgery include: the state of hydration, nutrition and existing medical conditions as well as extrinsic factors, the pre-, intra-, and post-operative care.[4]

It is always the top priority of each orthopedic surgeon to mobilize the patient as soon as possible after every lower extremity orthopedic surgery. Sometimes it is very difficult to mobilize the patient due to factors like patient's age, loss of joint integrity, general body weakness, and some comorbid psychiatric or neurological conditions.

The type of mobilization depends upon the surgical procedure, patient's age, bone density and patient's mental health. The types of mobilization are full, partial and non weight bearing. Some equipments, assistive devices, and walking aids are also commonly used like tilting table, immobilizers and crutches, walkers and canes. The patient's mobility is always the responsibility of the physical therapist with

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the consent of orthopedic surgeon.

Material and Methods

This was a quasi experimental study done in the department of orthopedics IIMCT Pak. Railway General Hospital Rawalpindi. Duration of the study was one year, from august 2010 to July 2012. 89 Patients were included in the study and divided in two groups (45 in group A and 44 in group B).convenient technique was applied. All patients of lower extremity surgeries above the age of 10 years, admitted and operated in the orthopedic unit were included in the surgery.

All patients with closed reduction procedures, arthroscopically assisted surgeries and with any surgical procedure done in the upper extremity were excluded from the study. The patients mobilized within one week after surgery were placed in the group A, the early mobilized group and all the patients mobilized after the one week of surgery were placed in group B , the delayed mobilized group.

The patients' data was analyzed by the statistical software SPSS version 16. Number of patients having postoperative wound infection was recorded in both groups. Percentages were calculated and compared using Chi-square test. P value < 0.05 was considered significant.

Results

Out of a total 89 patients, 55 were males and 34 were females. Minimum age of patients in this study was 10 and maximum 90 years with a mean of 44 in group A and 49 in group B. The total number of wound infections was 6 (6.74%); 2 (4.4%) in the early mobilized group and 4 (5.6%) in the delayed mobilized group, as shown in Table: I. The statistical analysis shows significant difference in number of infection in both groups and the statistical results for group A was (p value=0.03) statistically significant as compared to result (p value=0.06) for group B, which is statistically not significant. (Table I)

Table I: Frequency of postoperative wound infection after lower extremity orthopedic sugery(n= 89)

Patient groups	Total patients	Infected	Non infected
A	45	2(4.4%)	43 (95.5%)
B	44	4(9%)	40 (91%)

Discussion

These results are supported by many international studies. Stockton KA and Mengersen KA conducted a clinical trial on 57 patients who had undergone total hip replacement. They concluded that the patients, who received physical therapy treatment twice a day, achieved the functional milestones earlier as compared to the other group, who received physical therapy treatment once a day. The result of this study shows that early mobilization and physical therapy treatment can achieve early mobility and decreases the hospital stay.[5]

Study done by Brasher PA et al added that early mobility can decrease post operative complications after cardiac surgery. This clinical trial was conducted on two hundred and thirty patients and this study supports our results that early mobility can decrease postoperative infection.[6]

Another clinical trial conducted by Cinar N et al department of physical medicine and rehabilitation, Ankara Numune Training and Research Hospital, Ankara, Turkey on fifty seven patients with modified radical mastectomy. They concluded that early

onset rehabilitation program after modified radical mastectomy provides improvement in shoulder mobility and functional capacity without causing adverse effect in postoperative period.[7]

A randomized controlled trial done by Bendz I, Fagevik Olsen, and M Title on Two hundred and thirty women who had undergone surgery for breast cancer were randomized to a prospective study. At the end of this study they concluded that mobility of the shoulder girdle is restored in the immediate exercise group as compared to the delayed exercise group.[8] Stovall M et al conducted a randomized controlled trail on 199 patients. They compared the improved performance in activities of daily living with mobility after a multidisciplinary postoperative rehabilitation in older people with femoral neck fracture: a randomized controlled trial with 1-year follow-up. The intervention consisted of staff education, individualized care planning and rehabilitation, active prevention, detection and treatment of postoperative complications. They concluded that a multidisciplinary postoperative intervention programme enhances activities of daily living performance and mobility after hip fracture, from both a short-term and long-term perspective. This study supports the key role of a physical therapist and rehabilitation after lower extremity orthopedic surgeries.[9]

Budny PG, Lavelle J, Regan PJ, and Roberts AH conducted a randomized clinical trial on sixty one patients with Pretibial injuries. In group A they traditionally advised bed rest to 40 patients and in group B they early mobilized the 21 patients. Comparison of the outcome suggested that the hospital stay in group A was 12 days and group B only 2 days. They concluded that early mobility can decrease the hospital stay and post injury complications.[10]

In a contemporary study, Khan MS et al. showed 5.76% infection rate in their patients who had undergone orthopedic surgical procedures, supports our results. However they did not relate it to post operative immobilization time or early mobilization time.[11]

Conclusion

We conclude that after lower extremity orthopedic surgeries, early mobilization is needed, as it significantly reduces the postoperative wound infection rates, and early mobility is achieved.

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ORIGINAL ARTICLE

Frequency of Compliance with Antidepressants using Antidepressant Compliance Questionnaire

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ABSTRACT

Objective: To find out the frequency of compliance of patients using anti-depressants prescribed at out-patient department.

Study Design: Descriptive cross sectional study.

Place and Duration of Study: This study was conducted in the out-patient department of Institute of Psychiatry, Benazir Bhutto Hospital, Rawalpindi from September 10, 2010 till May 10, 2011.

Materials and Methods: One hundred and sixteen patients aged 18 years and above, presenting with moderate depressive illness, able to understand and speak Urdu, taking treatment for at least 4 weeks and belonging to both genders were recruited from out-patient department using consecutive (non-probability) sampling technique. Patients having severe depressive illness with psychotic features and severe agitation were excluded. Antidepressant Compliance Questionnaire was translated and validated through a pilot study and then the Urdu translation was orally administered to each participant for the assessment of compliance with antidepressant medication.

Results: Among the participants 74.1% were compliant and 25.9% were non-compliant with anti-depressant medications.

Conclusion: This study found a high degree of patient compliance with anti-depressants. The results would help in early recognition of non-compliant patients, so that necessary changes could be made in the treatment plan to ensure better compliance.

Key Words: *Adherence, Antidepressants, Patient compliance*

Introduction

Compliance can be defined as the coincidence of the patients' manners (in terms of taking medicines, following diets or bringing life-style changes) with health care providers' recommendations whereas the definition of adherence, according to WHO, is "the extent to which the patient follows medical instructions".[1] Patients' drug compliance and adherence to prescribed medicines play very important role in the outcome of treatment and prognosis of the disease. It is the most decisive variable for the treatment outcome. This may also have serious and detrimental effects on disease management.[2] Various studies have been conducted in the world in different diseases and different patient populations to evaluate the impact of therapeutic non-compliance on clinical outcomes. The compliance rate for short-term therapies was found to be 70% to 80%, for long-term therapies 40% to 50%, whereas for lifestyle changes, it was only 20% 30%.[3]

Being the most common psychiatric disorder, depression faces the highest degree of non-compliance. Despite the fact that depression treatment guidelines recommend continuation of medication for at least 6-8 months after symptom remission, 50% to 83% of patients either discontinue their antidepressants prematurely or take it too inconsistently to obtain any clinical benefit, which increases the risks of relapse and recurrence. [4] The factors which predict medication adherence or non-adherence with antidepressants include perceptions about antidepressants, casual beliefs regarding depression,[5] necessity versus harmfulness and treatment attitudes. [6,7] A Pakistani study has identified unawareness of treatment benefits, non-

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affordability and physical side effects as the primary reasons for non-compliance. [8] A study conducted in Karachi found that on follow up 18% of psychiatric patients were non-compliant, major reasons being denial of the disease and non-affordability. [9] A similar study carried out in OPD of a tertiary care hospital in Karachi found that adherence in patients of depression was 61.53%, in patients of psychosis it was 58.82% while in the patients of bipolar disorder it was 73.91%. Reasons for non-adherence included sedation (30%), medication cost (22%), forgetfulness to take medication (36%); and inability of the physicians to explain timing and dose (92%) or benefit of medication (76%).[10] Majority of the patients of depression treated in primary care settings are non- adherent due to concerns about medication cost, lack of insurance, stigma and inadequate patient education while trust in physician, inclination for antidepressant medication, shared decision in treatment choice and belief in the effectiveness of medication have been linked with adequate adherence.[11]

In a review of non-adherence with antidepressant therapy, values between 40% and 70% have been found in developed countries. [12] In one study, it was found that 30% patients discontinue therapy within 30 days and 68% discontinue therapy within 90 days of initiation, mainly due to adverse events, thus leading to adverse clinical and economic outcomes. Fewer than 33% of those patients who continue to take their medications constantly take the antidepressant as prescribed. [13] In a large European study of 7525 patients, 56% patients abandoned treatment within 4 months.[14]

Bulloch and Patten found that the main reason for non-adherence was forgetting (74.5%), followed by 'felt better' (10.7%), whereas side effects were reported as the fourth reason (5.9%) and patients are more non-adherent if they are unmarried, young adults, male, without a contact telephone number, belong to lower socioeconomic status and having a history of non adherence.[15]

The current study is aimed at determining the frequency of patient compliance with antidepressants at the OPD of the Institute of Psychiatry, Benazir Bhutto Hospital Rawalpindi, a tertiary care facility.

Materials and Methods

This study was carried out in the out-patient department of the Institute of Psychiatry, Benazir Bhutto Hospital, Rawalpindi, which is a tertiary care hospital, from 10th September 2010 till 10th May 2011. It was a descriptive, cross-sectional study. A sample of 116 patients was selected. All the patients aged 18 years and above, presenting with moderate depressive illness, able to understand and speak Urdu, taking treatment for at least 4 weeks and belonging to both genders were recruited by using consecutive (non-probability) sampling technique. The patients with severe depressive illness with psychotic features and severe agitation were excluded. Informed written consent was taken from all the participants. Participants socio-demographic details were obtained by using a Performa designed for this purpose. The diagnosis of depression in the participants was confirmed by using the ICD-10 Criteria for Depressive Illness. The Anti-depressant Compliance Questionnaire was translated into Urdu by second author and it was validated through a pilot study. Then it was verbally administered to the patients. This questionnaire was developed by Keon Demyttenaere, a psychiatrist in Belgium. [7] It is a 33 item, 4 point Likert type standard scale. It has a score range of 33-132, with a cut-off score of 83 such that score less than 83 signify non-compliance and a score of 83 or more signifies compliance. It also aims to

assess the patients' attitudes and beliefs on the diagnosis and etiology of his/ her depressive episode, on the treatment aspects and on doctor-patient relationship. The questionnaire has 4 components, each dealing with different factor. Component 1 deals with perceived doctor-patient relationship, component 2 deals with preserved autonomy, component 3 deals with positive beliefs on antidepressants and component 4 deals with partner agreement.

Results

The mean age of the sample was 36.36 (S.D±12.50), with a range of 18-59 years. Among the participants, 67(57.8%) were males and 49 (42.2%) females. Twenty eight (24.1%) had no formal education, 23 (19.8%) were educated till class 5th, 18 (15.5%) educated till class 8th, 19 (16.4%) till matriculate, 15 (12.9%) had done graduation and 13 (11.2%) had done post graduation. (Table-I) Among the participants, 38(32.8%) were single, 53 (45.7%) were married, 16 (13.8%) separated, 05 (4.3%) divorced and 04 (3.5%) were widow/ widower. (Table-II) Thirty nine (37.6%) had a monthly income of less than 5000 rupees, 40(34.5%) had an income of 5,000-10,000 rupees, 24 (20.7%) had an income of 10,000-25,000 rupees and 13(11.2%) had an income of more than 25,000 rupees. Among the participants, 86 (74.1%) were compliant and 30 (25.9%) were non-compliant with anti-depressant medications. (Table-III)The mean compliance score on Anti-depressant compliance questionnaire was 91.23 (S.D±23.61) with a range of 34-129.

Table I: The educational status of the participants (N=116)

Educational Status	Frequency	Percentage
No formal Education	28	24.1
Up till Class 5th	23	19.8
Up till Class 8th	18	15.5
Up till Matric	19	16.4
Bachelor	15	12.9
Masters	13	11.2

Table II: The marital status of the participants (N=116)

Marital Status	Frequency	Percentage
Single	38	32.8
Married	53	45.7
Separated	16	13.8
Divorced	05	4.3
Widow/ Widower	04	3.5

Table III: The number of compliant and non-compliant participants (N=116)

Patients Compliant with Antidepressants	Frequency	Percentage
Compliant	86	74.1
Non-compliant	30	25.9

Discussion

The study revealed that among the participants, 86 (74.1%) were compliant and 30 (25.9%) were non-compliant with antidepressant medication, depicting a high degree of compliance with antidepressants. (Table-III) This finding is significant and can be compared with other national and international studies.

A recent study from Pakistan was carried out in OPD of a tertiary care hospital in Karachi found that adherence among depressed patients was 61.53%.[10] Another study conducted in Karachi revealed that 18% of patients on follow up were non-compliant and 82 % were compliant with treatment [9] which is almost concordant with 74.1% compliance of our study. Another cross-sectional study conducted at the OPD of Psychiatry Department of Pakistan Institute of Medical Sciences, Islamabad

revealed that the frequency of non-adherent patients in major depressive disorder was (31.5%) [7] which is higher than our finding of 25.9 %. This study also found that the commonest reasons for non-compliance were unawareness of the benefits of treatment (43%), non-affordability of drugs (33.5%), physical side effects (28.5%), no awareness given by the doctor (03%) and unfriendly attitude of doctors (02%).

Clinical practice guidelines recommend that treatment should last for at least 3 to 9 months into the continuation phase. However it has been found that approximately 30% of patients discontinue therapy within the first month of initiation of treatment and over 40% discontinue therapy within 90 days of initiation, primarily due to adverse events, thus leading to adverse clinical and economic outcomes. [13] This can be compared with our study finding of 74.1% compliance and 25.9% non-compliance with anti-depressant medications. However our study has assessed patients after 01 month of anti-depressant medications and could have easily missed noncompliance that could be there in the later months of anti-depressant treatment thus revealing higher compliance with treatment.

In a previous study, it was found that among primary care patients of depressive illness taking Tricyclic antidepressants, 21% discontinued medication within 2 weeks of initiating treatment and additional 3% to 10% discontinued every 2 weeks, until only about one half took the medication for 4 months. This is an interesting finding and can be compared with 25.9% non-compliance reported in our study. Though, in our study, patients have been assessed for their compliance with anti-depressants at 1 month of treatment and have not been monitored beyond that time period in contrast with this study where the patient compliance and adherence has been monitored until at least 4 months.

In a community survey, it was found that the 10% who indicated taking their antidepressant medication "some of the time" or less during the past 4 weeks (non-adherent) were compared to the 86% who indicated taking their medication "all" or "most of the time" (adherent). [3] So the findings of this study are close to those of our study. In previous studies it has been reported that up to 68% of patients diagnosed with depression discontinue their antidepressants by 3 months, while of those patients who continue to take their medications, fewer than 33% consistently take the antidepressant as prescribed. [8] This finding can be compared with our research finding and we can see that our study shows a much higher compliance i.e., 74.1% which is inconsistent with the aforementioned research findings of a much higher non-compliance and treatment discontinuation rate.

Conclusion

This study found a high degree of patient compliance with anti-depressants. Antidepressant compliance questionnaire is an efficient and effective tool for measuring patient compliance that probes into various aspects of patient compliance. The results of current study would help in early recognition of non-compliant patients, so that necessary changes could be made in the treatment plan ensuring better compliance.

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ORIGINAL ARTICLE

Frequency of Latent Tuberculosis among Diabetics and Non-Diabetics

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ABSTRACT

Objective: To determine the frequency of latent tuberculosis among diabetics and non-diabetics.
Study Design: A descriptive cross sectional study.
Place and Duration of Study: At Unit II, Department of Medicine, Benazir Bhutto Hospital, Rawalpindi from October 1, 2009 to March 30, 2010.
Materials and Methods: A cross sectional study was carried out in MU II, BBH Rawalpindi. All patients, male and female , both diabetic and non diabetic, above the age of 18 years, presenting in Out-Patient department for regular check up or follow up were included in the study. Mantoux test was carried out in all patients to find out the frequency of latent tuberculosis in diabetics and non diabetics.
Results: A total of 286 patients were initially inducted in the study. However by the end of study, 20 patients dropped out as they lost follow up. So 256 patients were finally included in the study. Amongst them 131 were diabetics i.e., 51.2% and 125 were non diabetics i.e., 48.8%. One hundred and seventeen were male i.e., 45.7% and 139 were female i.e., 54.3 %. Mantoux test was carried out in all patients both diabetic and non diabetic. Out of 256 patients Mantoux test was positive in 33 patients i.e., 14.8%. Among diabetics Mantoux test was positive in 27 patients i.e., 10.5%. While among non diabetics Mantoux test was positive in 11 patients i.e., 4.3 %, with a p value of .008.This shows that latent tuberculosis is more common in diabetics than non diabetics.
Conclusion: Latent tuberculosis is more common in diabetics than non diabetics. Treatment of latent TB in diabetics may have a beneficial impact on TB control.

Key Words: *Latent Tuberculosis, Diabetics, Non-diabetics, Mantoux test.*

Introduction

Globally, tuberculosis (TB) is one of the leading infectious causes of adult mortality. Regions in the world where TB is most prevalent include Pacific Rim nations, Indian subcontinent, sub-Saharan Africa, Latin America, and the former Soviet Republics.[1] Because of delayed, inadequate, or unavailable therapy, 1.8 million persons die due to TB annually.[2] According to WHO estimates more than a fourth of preventable deaths in developing nations are attributable to TB. The risk of developing disease after being infected depends largely on multiple factors like diabetes mellitus, smoking and immunosuppressive therapies.[3]

For effective and efficient treatment of active TB, rapid diagnosis and treatment of patients are the key points in disease control. However, the treatment of latent TB infection to prevent progression to active disease is an essential component of public health efforts to eliminate TB.[4] Treatment of latent TB reduces the risk of developing active tuberculosis by 40%.[5]

Latent TB is diagnosed with Mantoux test. Patients with medical illnesses like diabetes are considered to have positive Mantoux test if induration is more than10mm,while in low risk patients if it is more than 15mm the test is considered positive.[6]

Diabetes mellitus (DM) is one of the risk factor for developing TB.[7] The world prevalence of diabetes among adults is 6.4%, affecting 285 million adults and will increase to 7.7%, and 439 million adults by 2030.[8]

Overlap between the DM and TB can adversely affect global TB control efforts.[9] This study was planned to note frequency of latent TB among diabetics and non-

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diabetics. Whole blood interferon-gamma assay (Quantiferon-TB gold and T-Spot-TB) is now available in developed countries for the diagnosis of latent TB.[5] Since this test is expensive and not routinely available in developed countries ,so we used conventional test i.e., Mantoux test to diagnose latent TB.

Materials and Methods

This cross sectional study was conducted Benazir Bhutto Hospital, Rawalpindi for 6 months. Sample size of 256 was calculated with 95% confidence interval, using WHO sample size calculator' A person was categorized as case when fasting blood glucose ≥126 mg/dl and random blood glucose level was =200 mg/dl), while controls were non-diabetic. Latent TB was considered present when tuberculin reaction size was ≥10 mm in cases and ≥15mm in controls. Exclusion criteria included; age <18 years, active TB, previous history of TB treatment (successful, failure), malignancy, chronic kidney disease, persons taking steroids, persons positive for markers of HIV, hepatitis B and C markers, and persons receiving immunoglobulins.

Detailed clinical evaluation and checking for blood sugars was done for induction of cases and controls after informed consent taking in consideration inclusion and exclusion criteria. Purposive sampling technique was used in this regard.

Each case and control underwent Mantoux testing in standard way. This included injecting purified protein derivative intradermally on the volar surface and reading reaction as transverse diameter of induration in millimeters (mm) after 48-72 hours on second visit. A tuberculin reaction size of 10 mm or more was considered indicator for latent TB in cases, and 15 mm in controls. Data regarding age, gender, Mantoux test results was collected on a specifically designed profroma. Frequency and percentages were calculated for gender and Mantoux results, while mean ± SD were calculated for age. Association of Mantoux test positivity (latent TB) was sought between cases and controls employing Chi square test.

Results

Of the 286 cases and controls, 20 dropped out due to follow up lost patients. Thus the study comprised 256 persons which included 131 (51.2%) cases and 125 (48.8%) controls. 117 (45.7%) of the study participants were males and 139 (54.3%) were females. Mean age of study participants was 49.1±15.49 years. Mantoux test was positive in 38 (14.8%) of all study participants, 27 (10.5%) cases, and 11 (4.3%) controls, p value 0.008.

Table I: Frequency of latent tuberculosis in study population (n= 256)

Patient Group	Number of Patients	Latent TB	Percent
Diabetics	131	27	10.5%
Non diabetics	125	11	4.3%
Total no of patients	256	38	14.8%

Discussion

Among infectious diseases tuberculosis is a leading cause of death, ranks second only to human immunodeficiency syndrome (HIV/AIDS).[10] In 2006, there were 9.2 million new cases of tuberculosis and 1.7 million deaths, with the burden of the disease occurring predominantly in the immunodeficiency virus and acquired imploding world.[11] It is estimated that currently one in three people of world's population is infected with latent

Mycobacterium tuberculosis, acting as reservoir for future disease.[12]

There is a strong link between diabetes mellitus and tuberculosis. In recent decades, tuberculosis incidence has declined in high-income countries, but incidence remains high in countries that have high rates of infection with HIV, high prevalence of malnutrition and crowded living conditions, or poor tuberculosis control infrastructure. At the same time, diabetes mellitus prevalence is increasing globally, which has impact on prevalence of tuberculosis and latent tuberculosis.[13] It is estimated that about 10% of people with latent TB will go on to develop active TB, which is infectious. In our study we tried to compare the frequency of latent tuberculosis among diabetics and non diabetics. In our study 256 patients were screened for latent tuberculosis. Amongst them 131 were diabetics i.e. 51.2% and 125 were non diabetics i.e. 48.8%. Out of them 117 were male i.e. 45.7% and 139 were female i.e. 54.3 %. Mantoux test was carried out in all patients both diabetic and non diabetic. Out of 256 patients Mantoux test was positive in 33 patients i.e. 14.8%. Among diabetics Mantoux test was positive in 27 patients i.e. 10.5 %. While among non diabetics, Mantoux test was positive in 11 patients i.e. 4.3 %, with a p value of 0.008. This shows that latent tuberculosis is more common in diabetics than non diabetics.

ADRIANA PÉREZ and others did a study to find association between tuberculosis and diabetes. A case control analysis of the hospital discharge data set from the Texas Health Care Information Council was performed for the years 19992001. Risk factors associated with tuberculosis were identified by logistic regression. Diabetes patients were almost twice as likely to have tuberculosis after adjusting by sex, age, and race/ethnicity.[14]

Alfredo Ponce-de-Leon carried out a study to determine the impact of diabetes on the rates of tuberculosis in a region where both diseases are prevalent. The estimated prevalence of diabetes in the study area was 5.3%. The estimated rates of tuberculosis for the study area were greater for patients with diabetes than for non-diabetic individuals (209.5 vs. 30.7 per 100,000 person-years, $P < 0.0001$). So the rate of tuberculosis was increased 6.8-fold ($P < 0.0001$) in patients with diabetes.[15]

Recently Muhammad Atif Shiraz and Abdullah Khan assessed the prevalence of latent pulmonary tuberculosis (TB) in young adult males. The study was carried out at Combined Military Hospital Kohat from January 2004 to August 2005. Sample size was 4000. 7.45% had strongly positive Mantoux test and were labeled as latent pulmonary TB. It was concluded that there is a high prevalence of latent pulmonary TB in our asymptomatic adult population.[16]

Similarly Qayyum A and others conducted a study to find the prevalence of Pulmonary Tuberculosis among diabetics. In this study the calculated prevalence of pulmonary tuberculosis among diabetic patients was 9.5% compared to non-diabetic patients who had prevalence of 2.08% (P-Value<0.002) indicating 7.5% higher risk in diabetic patients.[17]

Conclusion

Latent tuberculosis is more common in diabetics than non diabetics. Treatment of latent TB in diabetics may have a beneficial impact on TB control.

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ORIGINAL ARTICLE

Comparison of Suprascapular Nerve Block & Intra-articular Injection in the treatment of Frozen Shoulder

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Saba Sohail Sheikh, Zara S. Sheikh

ABSTRACT

Objective: The objective of this study was to compare the effect of supra scapular nerve block and intra articular injection to relieve pain and reduce disability in the patients of frozen shoulder.

Study Design: It was a quasi experimental study.

Place and Duration of Study: The study was conducted at the department of Orthopedics, Pakistan Railway Hospital, Rawalpindi, from August 2011 to September 2012.

Materials and Methods: Patients diagnosed as the cases of frozen shoulder in outpatient department of Orthopedics irrespective of their gender were included in the study. Forty patients and 50 shoulders were divided into two groups by randomization, one group received single suprascapular nerve block and second group received single intra-articular steroid injection. Both groups were advised for physiotherapy after injection. Patients' pain levels and ranges of movement were assessed over a period of twelve weeks.

Results: The study included 40 patients and 50 shoulders to a single suprascapular nerve block and intra articular steroid injection. The mean age of the patients was 49.4 $\pm$ 9.97 and the range was 40-60 years. There were 16 females and 24 male patients. Post injection assessment of patients was done at two, six, eight and twelve weeks. There was a significant decrease in pain and marked improvement in range of movement with supra scapular nerve block than with intra articular injection. Patients' pain levels and ranges of movement were assessed over a twelve week period.

Conclusion: Suprascapular nerve block produced a faster and more complete resolution of pain and restoration of range of movement than intra articular injection.

Key Words: *Frozen shoulder, Suprascapular nerve block, Intra-articular injection.*

Introduction

Shoulder pain has a prevalence of 15%30% in the adult population. It is a common complaint especially amongst the elderly and may lead to functional disability and decrease in quality of life.[1] Both suprascapular nerve block (SSNB) and intra-articular injection are effective methods for the treatment of frozen shoulder.

Shoulder pain is a common cause of morbidity in the community and most common causes of that pain include degenerative disease affecting the glenohumeral and acromioclavicular joints and supporting soft tissue structures in addition to inflammatory diseases such as rheumatoid arthritis (RA), seronegative spondyloarthropathies and crystal arthropathies.[2]

Frozen shoulder or adhesive capsulitis, is a common problem in general practice presenting as pain that may be severe, accompanied by a progressive loss of movements resulting in a loss of function.[3] While many treatments have been employed, few have been proven in randomized controlled trials such as simple analgesia, NSAIDs, intra-articular steroid injection and surgery, all have their limitations.[4]

Physiotherapy is often the first line of management for shoulder pain, it can help in early stages but in established cases, physiotherapy seems to be of little benefit and its efficacy has not been established.[5]

The suprascapular nerve supplies sensory fibers to about 70% of the shoulder joint, including the superior and postero-superior

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regions of the shoulder joint and capsule, and the acromioclavicular joint. In addition it supplies motor branches to the supraspinatus and infraspinatus muscles.[6]

SSNB performed in conjunction with rehabilitation program can provide the window of opportunity to proceed with effective rehabilitation program.[7]

Regional nerve block is effective for managing acute or chronic pain.[8, 9] Among various nerve block techniques, suprascapular nerve block is an effective, simple, and practical method for the management of shoulder pain.[8,10-12] It can be performed in the clinic using anatomical landmarks to determine needle placement.[13]

The aim of the study was to compare the effectiveness of SSNB versus intraarticular steroid injection, in management of chronic shoulder pain and to assess the effectiveness of these methods, improve range of movement of the shoulder and to demonstrate the most suitable method for treatment of such patients.

Materials and Methods

This quasi experimental study was conducted over duration of 1 year and 2 months from August 2011 to September 2012 in the orthopedic unit of Pakistan Railway Hospital Rawalpindi. As such, they had a loss of movement (most loss of external rotation, then abduction, and least loss of internal rotation). With pain that was constant, radiated beyond the elbow, or disturbed sleep. All resisted movements produced no pain. Serious pathology was excluded by measurement of ESR, random blood glucose, and rheumatoid factor.

Suprascapular nerve block: A mixture of 40 mg Triamcinolone acetonide and 9.5 ml 0.5% Bupivacaine Hydrochloride (Marcain) was injected using the technique described by Dangoisse *et. al.*[7] (Figure1). A 21G × 1.5" needle was introduced through the skin 2 cm cephaloid to the midpoint of the spine of the scapula (Figure 1). The needle was advanced parallel to the blade of the scapula until boney contact was made in the floor of the suprascapular fossa. This technique has previously been demonstrated to be safe and to effectively block the articular branches of the suprascapular nerve. The injection was not repeated. The need to include a steroid in the injection has been debated;[9] we chose to include it to minimize the differences between the treatment groups.

Following each treatment, all patients were given verbal and written instructions regarding a home exercise programme of self-mobilization, joint-stretching, and static rotator cuff strengthening. Patients were asked to take only paracetamol for pain relief.

Intraarticular injection: The solution injected contained 1cc of 2% lidocaine HCL and 2cc (80 mg) methylprednisolone acetate .All patients were injected once. The posterior approach was used to inject glenohumeral joint. The site of entry was same as used for traditional posterior portal for arthroscopy of shoulder. This portal is located 2 to 3 cm inferior and 1 cm medial to the posterolateral tip of the acromion. At this site the attempt was made to pass through the posterior soft spot between the infraspinatus and teres minor muscles. An 18 gauge spinal needle was inserted in this site with tip pointing towards coracoids process anteriorly. The index and middle finger was placed on the coracoid process to direct the tip of needle anteromedially towards the coracoid. When in right direction, the needle faces little resistance on entering the joint.

Assessment

Pain levels and range of movement were recorded at initial attendance and after two weeks, six weeks, eight weeks, and twelve weeks. To avoid bias, patients graded their pain using the scale in Table I. The sum of the three columns was recorded as the total pain score. Range of movement was measured using a goniometer in three planes: abduction and external rotation. No attempt was made to isolate gleno-humeral movement, as total shoulder movement gave more reproducible results and is a better gauge of function. Data was entered into performa and was analysed using SPSS 12.

Table I. Scale used to grade severity of pain.

Score	Pain	Radiation	Sleep disturbance
0	None	None	None
1	Mild, intermittent	To elbow	Mild
2	Mild, constant	To wrist	Moderate
3	Moderate	To hand	Severe
4	Severe	-	-
5	Very severe	-	-

TableII: Comparison of the two treatment groups at initial assessment

Group Study	Age	Male / female	Simple pain score	Total pain score	Abduction	External rotation
Suprascapular nerve block group I	40 – 60 yrs	13 / 07	4	8	90	20
Intararticular injection group II	40 – 60 yrs	12/08	3	7	100	30

Table III: Pain scores and range of movement in suprascapular nerve block (SNB) and intra-articular groups (IA).

Duration	Simple pain score		Total pain score		Abduction		External rotation	
	SSNB	IA	SSNB	IA	SSNB	IA	SSNB	IA
Initial	4	3	8	7	90	100	20	30
week 2	2	2	6	5	120	110	40	40
week 6	1	2	3	4	140	130	70	60
Week 8	1	2	1	3	160	140	80	60
Week 12	1	2	1	3	180	150	80	60

Results

The study included 40 frozen shoulder patients. The mean age of the patients was 49.4 $\pm$ 9.97 years and the range was between 40-60 years. There were 16 (40%) females and 24 (60%) males. All patients diagnosed as cases of frozen shoulder were divided into two groups randomly. Patients were placed alternately into the two groups. The group I patients received SSNB while group II received intraarticular injection. After the injections all patients were advised home exercises. Patients were serially followed for three months after 2, 6, 8 and 12 weeks time.

Group I had 13 males and 7 females, their ages were 49.4 $\pm$ 9.97 with disease duration ranged between 3-12 months. While the ages of group II was also the same, disease duration ranged between 3.5-12months and it included 12 males and 8 females. Both Groups did not differ significantly at baseline for personal characteristics as age, sex, disease duration. All the patients recovered in the mean time of six weeks. (Range 3 weeks to 12 weeks). Three patients did not meet the recovery criteria within three months after injection. These patients did not strictly follow the home exercise routine advised after SSNB and intra-artriculer injection.

At base time, no significant difference was found between two groups as regard to pain, disability and total pain scores. Pain improved significantly in all times of follow up with best improvement in group I.

Range of active movements showed no significant differences at base time between the two groups. Over the 4 time periods, abduction & flexion and external rotation showed significant differences in all groups with gradual improvement from week 2 to week 6 to week 8 to week 12.

No complication occurred in SSNB group.

While four patients in intra-articular injection complained of shoulder pain anteriorly. Three patients claimed that the pain relieved in 2 to 3 days time. But only one patient remained in distress at first assessment. At final assessment no patient claimed of any side effects of the intervention. Statistical analysis revealed a significant difference in the recovery of the patients of two groups of frozen shoulder.

intra-articular
oss tabulation

Count		Pain relieved		
		mild, intermittent	mild,constant	Total
site of injection intra-articular	Yes	0	20	20(p value < .005)
	no	20	0	20(p value < .005)
	Total	20	20	40(p value < .005)

suprascapular
oss tabulation

Count		Pain relieved		
		mild, intermittent	mild,constant	Total
Site of injection suprascapular	yes	20	0	20(p value < .005)
	no	0	20	20(p value < .005)
	Total	20	20	40(p value < .005)

intra-articular
oss tabulation

Count		range of motion			
		abbduction	external rotation	abduction& external rotation	Total
site of injection intra-articular	Yes	6	11	3	20(p value < .005)
	No	0	2	18	20(p value < .005)
	Total	6	13	21	40(p value < .005)

Table VII: Site of injection suprascapular * range of motion Cross tabulation

Count		Range of motion			
		abbduction	external rotation	abduction& external rotation	Total
Site of injection suprascapular	Yes	0	2	18	20(p value < .005)
	No	6	11	3	20(p value < .005)
Total		6	13	21	40(p value < .005)

Both the methods used are significant as per statistical value but SSNB give early and long term pain relief and range of motion than intra-articular nerve block.

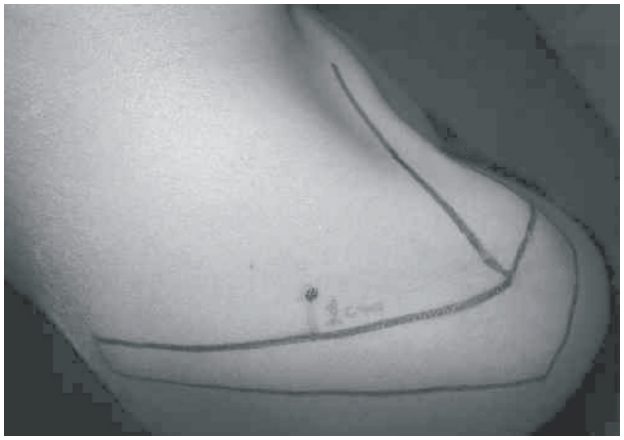

Figure 1: Dangoisse technique. Posterior shoulder view; the needle is inserted 1 cm above the middle of the spine of scapula to the floor of the supraspinatus fossa.
AC: acromion; CL: clavicle; SS: spine of scapula.

Discussion

The results of our study show a clear benefit from the use of suprascapular nerve block using
bupivacaine and methylprednisolone over intra- articular steroid injection in patients with frozen shoulder. There were statistically and clinically significant reduction in pain and disability. This benefit was prolonged, with benefit still present at 12th week. The improvement in these

parameters are better or at least comparable with published studies examining NSAIDs or intra-articular steroid injection.[14-16] Not much literature is present on the comparison study of SSNB and intra-articular steroid injection for the treatment of frozen shoulder There were no significant side effects from the injection, which was well tolerated by most of the patients.

The SSNB is an effective and safe pain treatment in chronic diseases that affects the shoulder, and has been widely used by professionals in clinical practice such as rheumatologists, orthopedists, neurologists, and pain specialists. The pain in this joint is a frequent complaint and leads to significant functional disability and reduced quality of life of the affected patients. When properly indicated, SSNB should be considered.

Shoulder pain and restriction of glenohumeral movements are the main clinical findings in frozen shoulder. Three sequential phases are described in its clinical course.[8] After the painful and stiff phases, the last phase, the resolution phase, is a self-limited membrane of the joint are innervated via axillary, suprascapular, subscapular, and musculocutaneous nerves. The suprascapular nerve, which provides sensory fibers to approximately 70% of the shoulder joint has afferent, efferent, and sympathetic fibers.[12] The efferent fibers innervate the supraspinatus and infraspinatus muscles. The afferent fibers distribute to the articular capsule and ligaments of the glenohumeral and acromioclavicular (AC) joints and to the periosteum and tendons of the scapula. Significant pain relief can be produced if the nerve block can be performed before it gives off to its articular branches.[8, 12]The most appropriate site is around the suprascapular notch, in which the nerve can also be located easily. Prominent pain relief is a natural consequence of the regional block of the suprascapular nerve that innervates a wide portion of the shoulder joint.[8]

Various suprascapular nerve block techniques have been described by several investigators.[11, 12, 14] Dangoisse et al described indirect suprascapular nerve blocks, using anatomical landmark.[14]

We have demonstrated that suprascapular nerve block is efficacious over intra-articular steroid injection without the need to image the area, by ultrasound or fluoroscopy during the procedure. This study shows that this treatment not only reduces pain but also decreases disability and gives clinicians a proven efficacious treatment for patients with frozen shoulder. Whether the efficacy would be further improved with guidance of the needle under direct imaging is unknown. Longer period of pain relief and combination of nerve block with other approaches to pain relief would also be a potentially worthwhile area to study.

It is not clear how the nerve block acts to produce a resolution of the symptoms. As the direct action of Bupivacaine cannot extend beyond a few hours or days there must be an effect on the underlying pathology, which owes in part to the patient's ability to perform an adequate exercise programme. The Triamcinolone included in the injection may have a systemic anti-inflammatory effect, but this should be the same in both groups. A more definitive study could also have a third group of patients treated by nerve block without steroid. Since the nerve block produces a faster resolution, its widespread use could produce a saving of time and

further economic benefits if patients are able to return to work sooner.

Conclusion

Combination of physical treatments with suprascapular nerve block significantly improve outcome in chronic shoulder pain, and can be more effective than conventional treatments, offering clear advantages (ease of application, low cost, rare side effects) considering that the top priority of a pain control program is restoring the function of the affected area. Further, it may prove to be a useful treatment for patients who are unfit or unwilling to consider manipulation under anesthesia.

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ORIGINAL ARTICLE

Headache: A useful clinical feature in detecting serious underlying cause

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ABSTRACT

Objective: To examine the utility of clinical features in detecting serious underlying causes of headache in patients presenting to an emergency room.

Study Design: Descriptive Observational Study.

Place and Duration of Study: Pakistan Railway Hospital spanning over a period of one year from July 2010 to June 2011.

Materials and Methods: Medical records of the patients attending the Emergency Room with headache as the major complaint were studied.

Results: 312 patients presented to ER with a complaint of headache. Of these 7.7% (n=24) had malignant headache and 92.3% (n=288) had benign headache. One hundred and ninety six patients (62.8%) were women and 116(37.2%) were men. In males there were 86.2% patients with benign headache and 13.8% with malignant headache. While in females 94.9% had benign and 4.1% malignant headache. Ninety percent of patients had altered consciousness at presentation proved to have malignant cause for their headache. This figure was 91% for limb weakness, 100% for papillary and gaze abnormalities, 89% for extensor plantar response, and 85% each for papilledema and neck rigidity.

Conclusions: Females present at younger age with headache and tend to have benign than malignant headache in majority of cases. Males present at relatively older age and tend to have malignant than benign headache in majority of cases**.** Younger patients presenting with headache usually have benign and elderly patients usually have malignant illness as the cause of their headache. With a good history and thorough physical examination Imaging like CT Scan and MRI can be avoided.

Key Words: *Benign headache, Malignant headache, Neck rigidity.*

Introduction

Most of the patients who visit the emergency department for headache prove to have a benign cause for their complaint but physician has to rule out an unexpected and potentially serious disease such as subarachnoid hemorrhage.[1] A thoughtful approach complemented by the judicious selection of tests is compatible with that goal as well as achieving the desired outcome of accurate diagnosis and relief of pain.[2]

There is a tendency to order expensive investigations in the emergency department in the fear of missing a diagnosis. The National Hospital Ambulatory Medical Care Survey for the years 19922001 revealed that in USA of the total of patients who underwent neuro imaging only 5.5% received a pathological diagnosis.[3]

Assessing the pretest probability with detailed history and physical examination will help reducing the cost of expensive tests unduly ordered. [4] A thorough neurological assessment is not only necessary for a correct diagnosis but it also enables the clinician to identify the seriousness of the problem by distinguishing between primary and secondary headaches and to make a definite plan for the additional workup for the safe and effective management of patients with headache.[5]

In 2008 the Policy of the American College of Emergency Physicians on evaluation and management of adult patients presenting to the emergency department with acute non-traumatic headache was revised. In this policy there are recommendations for imaging in all headaches with abnormal neurological examination, new onset severe headache, HIV patients presenting with severe headache and patients more than 50

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years of age presenting with new type of severe headache.[6]

The purpose of this study is to highlight the importance of clinical examination in the evaluation of a patient with headache in emergency department. A lot of work has been done in the west in this regard to help an ER physician in quick evaluation of a patient with headache with least possibility of missing a diagnosis without ordering too many investigations. Such studies are lacking in our setting.

Material and Methods

Medical records of 312 patients, who had presented to ER with headache as their major complaint during the study period, were studied. A Performa was filled depicting the details about age, sex, occupation, marital status, history of the headache with special emphasis on duration, onset, mode of presentation, location, associated features like fever, aura, impairment of consciousness, nasal congestion, lacrimation, visual disturbances, photophobia, irritability, nausea, vomiting, vertigo, dizziness etc. There were also details about physical examination including pulse, BP, temperature, general physical examination, abnormal neurological findings like limb weakness, altered mental status, brisk deep tendon reflexes, extensor plantar responses, pupillary abnormalities, conjugate gaze deviation, signs of meningeal irritation and other details in examination of the nervous system. A note was also made of the investigation carried out in the ER and the final diagnosis at the time of discharge.

We divided our patients into two groups:

Group 1: Comprised those patients who had spent less than two hours in the ER.

Group 2: Comprised those patients who had spent more than two hours in the ER and underwent thorough clinical examination and investigations.

We then studied the charts for follow-up in OPD for the next six months and made a note of the final diagnosis after six months of follow-up was made.

Inclusion Criteria:

All the patients attending the ER whose major complaint was headache.

Exclusion criteria:

- Patients with vague complaints.
- Headache being the part of illness like flue or febrile illness.
- Patient discharged immediately or triaged to OPD and not retained in ER.

Results

Three hundred and twelve patients presented to ER with a complaint of headache. Of these 196(62.8%) were women and 116(37.2%) were men. Most patients 217(70.2%) spent less than 2 hours in the ER. 95 patients (29.8%) stayed for more than 2 hours.

Of 312 patients 24 (7.7%) had malignant headache and 288 (92.3%) had benign headache.

The mean age of presentation in males was 41.43 years (range 3-78years), while the mean age in females was 33.17 years (range 2-75 years). In males there were 86.2% (n=100) patients with benign headache and 13.8% (n=16) with malignant headache while in females 94.9% (n=188) had benign and 4.1% (n=8) malignant headache.

There were 245 patients in the age group between 11-50 years. Out of these only 3% (n=7) patients had malignant headache while 97% patients (n=238) had benign headache. There were 32 patients between the age of 51 and 60 years and amongst them 87.5% (n=28) had benign headache and 12.5% (n= 4) had malignant headache.

There were 21 patients between the age of 61 and 70 years and amongst them 12.5% (n= 4) had malignant headache and 66.66% (n=14) had benign headache.

At extremes of ages there were more patients

with malignant than with benign headache. Below age 10 years there were 9 patients, 33.3% (n=3) who had malignant headache while above 71 years of age there were 5 patients and 66.66% (n=3) had malignant headache

Out of 196 females who presented to ER with headache 122 (62%) had severe headache and 96 (49%) had a history of recurrent attacks with similar pattern in the past.

There was sudden onset of severe headache in 176 patients but out of these only 18 (10.2%) had proved to have a serious cause to their headache. Photophobia was an associated feature with headache in 56 patients but 40 out of these had migraine as their final diagnosis. All the patients who had meningitis as their final diagnosis had photophobia as prominent associated feature with their headache. The frequency of signs on physical examination in malignant headache was as follows: 90% of those who had altered consciousness at presentation proved to have malignant cause for their headache. This figure was 91% for limb weakness, 100% for pupillary and gaze abnormalities, 89% for extensor plantar response, and 85% each for papilledema and neck rigidity.

Thirty eight CT Scan head were performed. Only 8 were reported as positive. Of these positive CT scan patients there were 6 males between the age of 51 to 60 years and 2 females above the age of 70 years. A total of 10 lumber punctures were performed. Out of these 5 (50%) were positive. Out of those who tested positive 3 (71.5%) were from the age group of below 10 years.

The final diagnosis made in the ER was as follows: Total of 24 patients had some malignant cause for their headache. Out of these Subarachnoid Haemorrhage 1.6% (n=5), Intracranial Hemorrhage 3 % (n=9), Meningitis 1.6% % (n=5), Venous Sinus Thrombosis 0.32% (n=1),

Benign Intracranial Hypertension 0.32% (n=1), Space Occupying Lesions 0.96% (n=3).

Discussion

Headache management especially in an emergency setting needs lot of expertise. Most of the ER physicians are trained in internal and emergency medicine and are expert enough to deal with the headache as a medical emergency.[7]

In a busy tertiary care centre ER where at least 2-3% of patients are admitted with headache as their chief complaint, a quick clinical assessment and a prompt diagnosis is essential for proper management. Sometimes, although rarely, the ER physicians cannot face satisfactorily the diagnostic challenge concerning the benign etiology of referred headache.[8]

The major critical issue in ER is to distinguish subtle primary headaches from more serious secondary headaches like subarachnoid haemorrhage, intracerebral haemorrhage, subdural haematoma,

Table I: Frequency of variables in the study population (n= 312)

Variable	Frequency
Males	116 (37.2 5 %)
Females	196 (62.8 %)
Time Spent < 2 Hours	217 (70.2 %)
Time Spent > 2 Hours	95 (29.81 %)
Malignant Headache	24 (7.7 %)
Benign Headache	288 (92.3 %)
No.of C.T Scan Done	38
No of C.T Scan Showing Pathology	8 (21%)
No of L.P performed	10
Abnormal L.P	5 (50 %)

hypertensive encephalopathy, brain tumor, and other space occupying lesions, artery dissection, cerebral venous thrombosis, temporal arteritis etc. Missing any of these could prove hazardous. [9]

All these situations demand both a careful evaluation and a correct diagnostic algorithm and can be grouped in subtypes such as severe-onset secondary thunderclap headache, transient neurological deficits, neurological deteriorations, headache associated with infections, etc.[10]

There are many clinical features which can distinguish between primary and secondary headaches. Benign headaches tend to occur in younger patients and predominantly in female. They are mostly unilateral and there is long history of constellation of similar features in each episode which usually have a triggering factor. On the other hand secondary headaches occur at an older age, males are the usual sufferers, are usually generalized, neurological examination is abnormal.[11]

The time course of a headache can give a good clue to the etiology of headache.[7] A new onset severe headache with abnormal neurological examination and presentation due to associated features is usually due to a secondary cause and should be investigated in ER with imaging.[8] An excruciatingly painful headache with a sudden onset can reflect vascular pathology, such as subarachnoid hemorrhage.[12,13]

Survivors of subarachnoid hemorrhage often describe the pain as the worst headache ever encountered.[14]

Headaches that occurs on at least 15 days per month for 4 or more hours per day, for at least three consecutive months is called chronic daily headache. If the attacks last for less than 4 hours per day then likely diagnosis is chronic cluster headache or trigeminal autonomic cephalalgia which includes episodic and chronic cluster headache, episodic and chronic paroxysmal hemicranias etc. If the duration is =4 hours then differential diagnosis encompasses chronic migraine and chronic tension-type headache.[15]

For a long time physicians have been using favorable response to analgesics as an indicator of benign type of headache. [12]Studies have proved that it is not a good predictor of severity rather, at times, it could be hazardous. [16]

Much work has been done in this regard to find out a relationship between clinical presentation and diagnosis of headache. Work of Detsky ME et. al. to find out cardinal signs pointing towards migraine and other benign headaches is worth mentioning. Four signs which predict migraine are unilateral, pulsating headache, of 4-72 hours duration associated with nausea.[1]

In the study by Ertan Mert et. al., three important correlations were found. Unilateral location and having any trigger increased 1.431 and 1.44 fold increase respectively in primary headache risk. Having an associated co-morbid medical disorder caused 4.643 fold increases in secondary headache risk.[17]

In the famous study by Ramirez-Lassepas M it was concluded that abnormal results from neurological examination are the best clinical parameters to predict structural intracranial pathology. However, in patients over age 55 years an imaging is strongly recommended specially if headache in the occipitonuchal region .[18] In our study abnormal neurological findings had strong association with secondary causes of headache.

Conclusions

We conclude that:

- Females present at younger age with headache and tend to have benign than malignant headache in majority of cases
- Males present at relatively older age and

tend to have malignant than benign headache in majority of cases

ER stay is prolonged because of:

- Severity of symptoms
- Investigations
- Difficulty in reaching a diagnosis
- Severity of headache is not an indicator of Malignant Headache.
- Photophobia and Phonophobia are not necessarily present in fulminant headache
- Abnormal Neurological Signs indicate malignant headache
- Most of the Investigations done are unnecessary
- With a good history and thorough Physical Examination Imaging like CT Scan and MRI can be avoided

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ORIGINAL ARTICLE

Efficacy of Intrasheath Steroid Injection in Treating De Quervain's Disease

Syed Qasim Mehmood, Johar Ali, Asif Saeed, Muhammad Nawaz, Rifat Latif

ABSTRACT

Objective: To determine the effectiveness of Intrasheath steroid injection in treating de Quervain`s disease.
Study Design: Case series observational study.
Place and Duration of Study: Outpatient Department of Orthopedics BBS [DHQ] Teaching Hospital Abbottabad from April 2006 to Sept 2009 including a period of follow up of eighteen months.
Materials and Methods: Eighty patients with de Quervain`s disease were diagnosed on the basis of positive Finkelstein`s test and presence of severe pain for more than four weeks. These patients were given intrasheath injections of 40 mg Methyl Prednisolone mixed with one ml of lignocaine 2% in the first dorsal compartment of wrist. Patients with trauma, infection and rheumatoid arthritis were excluded from study.
Results: Seventy two patients i.e., 90% were cured and out of them 75% required only one injection .Only two cases underwent surgical release.
Conclusion: Intrasheath steroid injection is a safe, very useful and cost effective method in treating de Quervain`s disease.

Key Words: *de Quervain's disease, intra sheath injection, steroid injections*

Introduction

In a busy outpatient department of orthopedics or rheumatology we come across with a lady having a sore thumb and wrist, almost on daily basis. It was fritz de Quervain, a Swiss surgeon who in 1895, first described this condition as a tenosynovitis of the first dorsal compartment.[1] Most of patients suffering from this problem first try different things either at their own or on the advice of their GP's ranging from natural to physical therapies and NSAID etc. But to their dismay most of these techniques fail and they have to seek the advice of specialist doctor.

Surgical release of the stenosing sheath is a good option in resistant de Quervain's cases. Although performed as a day case, it requires about two weeks for complete recovery, besides it is much costly and associated with a number of complications.[2,3] Surgical treatment is often chosen without careful consideration and importance of non surgical options is not emphasized.[4] Recently there have been a number of claims regarding the efficacy of intrasheath steroid injection. Sawaizumi, et. al., reported an efficacy rate of 94% with intrasheath injection of steroids.[5] Richie and Eriner reviewing seven current reputable papers, concluded that the efficacy rate of injecting the steroid alone was 83%.[6,7,8,9] It is a safe and simple technique which can be carried out in outpatient department.[10] There is very little chance of serious complications as well.[11]

Hence this study was carried out to further strengthen this claim that injection treatment of de Quervain's disease is the best option and it is not associated with any serious complication.

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Materials and Methods

This observational study was done in outpatient department of orthopedics of BBS [DHQ] Teaching Hospital Abbottabad from April 2006 to Sept 2009 including a follow up period of eighteen months. Eighty patients, who were diagnosed on the basis of positive Finkelstein test, were included in this study. All patients had severe pain

which was interfering their daily activities for more than four weeks. Besides other methods of treatment like rest, splints, physiotherapy and NSAIDs had not given much benefit. All patients with a history of rheumatoid arthritis, trauma or local infection were excluded. We injected 40 mg of Methyl Prednisolone mixed with one ml of Lignocaine 2% in a 3 cc syringe. Instead of giving vertical injections we bent the needle at 45 degrees and passed it from distal end proximally parallel to the involved tendon in the first dorsal compartment of wrist. Slight ulnar deviation made it easy. Intra sheathal status of the needle was ensured by the need of less force to push the syringe and absence of swelling in subcutaneous tissue.

All patients were asked to report after two weeks if no complications occurred. Success was measured by absence of pain on wrist movements and a negative Finkelstein`s test. Second injection was given after three weeks in patients who showed less improvement or recurrence. A third injection was given after another three weeks in cases who had still not responded to the treatment.

Results

Out of 80 patients, 72 were considered to be cured as they remained symptom free after 18 months of follow up. In 75% of these cases only one injection was used (Table II). In others a second injection was given after 03 weeks. Out of 80 patients, those who reported with recurrence even after second injection, a third injection has to be given i.e., 08 patients (10%). Of these 08 cases, 02 finally underwent surgical release. The fear and doubts about injection were removed, to a large extent by proper counseling. After injection, 90% of patients were satisfied and ready to accept it again if required.

Slight increase in pain was reported by 70% of patients which however improved over a week in patients who were later declared cured.

Depigmentation at the injection site was reported in five patients and atrophy of fat in subcutaneous tissue was seen in one patient only. No tendon rupture, infection or injury to radial nerve was seen.

Slight increase in pain was reported by 70% of patients which however improved over a week in patients who were letter declared cured

Depigmentation at the injection site was reported in five patients and atrophy of fat in subcutaneous tissue was seen in one patient only. No tendon rupture, infection or injury to radial nerve was seen.

Discussion

Owing to de Quervain's tenosynovitis common occurrence, there must be some treatment guidelines and recommendations so as to save time and cost. The Brigham and women's Hospital guidelines for treatment of de Quervain's tenosynovitis, state that corticosteroid injection may be very helpful and that they should be considered if symptoms persist beyond 6 weeks of conservative treatment.[12] whereas Orthopedic text books recommend corticosteroid injection for de Quervain's tenosynovitis after 2 weeks of conservative treatment has failed.[13] Up to date recommends steroid injection if pain persists for more than 2 to 6 weeks despite splinting , icing and NSAID therapy.[14]

A pooled quantitative literature search concerning the treatment of de Quervain's tenosynoritis compared 07 studies (a total of 459 wrists of the 226 cases) treated with steroid injection alone 83% were cured, though 30 of these needed a second injection. Sixty one percent of those treated with injection and splint were cured, while 14% treated with splint alone reported cure.[7]

In another retrospective study comparing injection with splinting and non steroidal anti inflammatory drugs NSAIDS, Authors

stratified patients into minimal, mild, or moderate to severe, groups based on their severity of disease. Of those cases treated with splinting and NSAIDS, 15 of 17 in the minimal group had resolution of symptoms, but only 4 of 20 in the mild group and 2 of 8 in the moderate to severe group had symptoms resolved. The injection group showed better results with 100% of cases in the minimal to mild groups resolving and 76% of those in the more severe group resolving completely with an additional 7% reporting improvement.[15]

To make steroids more effective, injection needs to be properly placed in the tendon compartment i.e. intra sheath.[16] The efficacy can be enhanced and compilation rate reduced to almost nil by ultrasound guided injections of steroids into tendon sheaths.[17]

However an earlier prospective study of 103 patients found suprafibrous injection to be easier to perform than intrasynovial injection and to have the same effects.[18] In our study we gave intra sheath injections and did not find it much difficult, besides it can also avoid potential complications of leakage of steroids in subcutaneous tissue or damage to superficial radial nerve by misplaced needle. We slightly modified the original technique by bending the needle to almost 45 degree and inserting it beneath the tendons along there line proximately. [19] An orthopedics study compared different techniques for injection and found that two point injections vertically in the indurated area is better than injection at one point.[5] But we think if it is properly placed in the sheath or compartment, it does not matter even if there is a septum with in the first dorsal compartment of wrist.[20, 21] This septum would be more effective than surgical as compared to injection as injection liquid would spill over or will he absorbed in the vicinity as well that is why Taras JS et. al., concluded that exact location of injection into the sheath may not be important in the treatment of trigger digits.[22]

Surgical release is not a bad option in de Quervain's disease but it is not fair to choose an option which is invasive, costly and not without some serious complications, particularly when a simple injection of steroids can cure almost 80-90% of cases.[23] However in chronic cases with much thickening of the sheath and those not responding to repeated local injection can be treated by surgical release with good long term relief. [24, 25]

Conclusion

Intrasheath steroid injection is a safe, very useful and cost effective method in treating de Quervain`s disease.

Table I: Demographic Data of study population (n= 80)

No. of patients	Age	Sex	Occupation
51	30 - 50	F	House Wife
8	20 – 30	F	Student
9	25 – 35	F	Beautician Office worker
7	30 – 35	M	Plumber /labours
5	20 – 25	M	Students / sportsmen

Table II: Number of injections and their response in the treatment of de Quervain's disease (n= 80)

No. of patients	No. of injections	Response
54	ONE	All CURED
18	TWO	10 "
6	THREE	6 "

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