A second thought on low lying pubic tubercle -can inguinal hernia occurrence be predicted?

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ABSTRACT

Introduction: Among all hernias inguinal hernia is known to be the most common condition for which surgery is being performed and 75% of all hernia occur in groin. The low pubic tubercle has more tendencies for herniation due to unusual origin of internal oblique muscle leaving internal ring unprotected during abdominal muscle contraction. In view of this we conducted a study to evaluate the incidence of inguinal hernia in low lying pubic tubercle and its correlation with occurrence of inguinal hernia.

Materials and methods: A Hospital based prospective study was be conducted on 100 patients, who came with inguinal hernia conducted from May 2015 to April 2018 at Father Muller Medical College Hospital and those who met the criteria. Plain Anteroposterior Radiographs of Pelvic region in 100 patients of inguinal hernia and to find out if low lying pubic tubercle has any correlation with occurrence of inguinal hernia.

Results: A total of 100 patients with inguinal hernia meeting the inclusion criteria was included in the study, plain X-ray of the pelvis was taken to measure SS (Distance between each anterior superior iliac spines) and ST (Spinotubercular) line and we found that 76 patients out of 100 (76.0%) patients with inguinal hernia had a low lying PT that is ST >7.5 cms. 78 patients had indirect inguinal hernia and 32 patients had direct inguinal hernia.

In our study of groin hernias, the most common age group involved is the 41-50 years age group with 17 cases 42.5%. The mean age in our study was is 47.05 years Standard deviation of age is 12.15years. In our study of groin hernias, the most common gender involved in groin hernias was male with 38 cases 95% of the cases.

Keywords: I nguinal Hernia; Spinotubercular distance; low lying pubic tubercle

1. Introduction

Among all hernias inguinal hernia is known to be the most common condition for which surgery is being performed and 75% of all hernia occur in groin[1]. There are various predisposing factors which may cause inguinal hernia, but what makes few people more susceptible to this is still not clear. In the presence of low lying pubic arch there will be a longer inguinal ligament and larger suprainguinal angle which may account for a greater area of suprainguinal space causing deficient function of shutter mechanism[2]. The low pubic tubercle has more tendencies for herniation due to unusual origin of internal oblique muscle leaving internal ring unprotected during abdominal muscle contraction[3]. In view of this we conducted a study to evaluate the incidence of inguinal hernia in low lying pubic tubercle and its correlation with occurrence of inguinal hernia.

2. Materials and methods
A Hospital based prospective study was conducted on 100 patients, who came with inguinal hernia conducted from May 2015 to April 2018 at Father Muller Medical College Hospital and those who met the criteria

Inclusion criteria:
Patients who presents with early inguinal hernia reducible and restricted to the groin
Age-18 to 50 years
All patients given consent for the study

Exclusion criteria:
Patients who had history of displaced pelvic bone fracture
Patient of any hip pathology

2.2 Method of collection of data
Low lying pubic tubercle is considered if the spinotubercular distance is more than 75mm[4]. Spinotubercular (ST) distance i.e. vertical distance between interspinous and transtubercle lines was measured in plain anteroposterior radiographs of pelvic region in 100 patients of inguinal hernia and to find out if low lying pubic tubercle has any correlation with occurrence of inguinal hernia

Results
A total of 100 patients with inguinal hernia meeting the inclusion criteria was included in the study, plain X-ray of the pelvis was taken to measure SS (Distance between each anterior superior iliac spines), ST (Spinotubercular) line and we found that 76 patients out of 100 (76.0%) patients with inguinal hernia had a low lying Pubic Tubercle that is ST >7.5 cms. 78 patients had indirect inguinal hernia and 32 patients had direct inguinal hernia. In our study of groin hernias, the most common age group involved is the 41-50 years age group with 17 cases 42.5%. The mean age in our study was is 47.05 years Standard deviation of age is 12.15 years. In our study of groin hernias, the most common gender involved in groin hernias was male with 38 cases 95% of the cases.

3. Discussion
The mean age in our study was is 47.05 years. There are various studies which show that the peak age of presentation of adult inguinal hernia varies from 48 to 54 years.\textsuperscript{5,6} Inguinal hernias commonly occur in males than females.\textsuperscript{5,6} In our study on evaluation of the presenting complaints the most common presenting complaints were swelling in the groin and pain at the groin in 40 patients, 100 % of the cases. The most common presentation of inguinal hernias in the clinical practice is a groin swelling. In our study of groin hernias, the most of the side involved was the right side in 24 cases, 60% of the individuals\textsuperscript{[7]}. 

![Image of pelvic region showing pubic tubercle and sacrum](image_url)
Sehgal et al observed that in 73.6 % of cases and only 16% of controls belonged to Group II and concluded that the low lying pubic tubercle was a predisposing factor for inguinal hernia and sehgal et al in their study showed the mean value of ST line in study group was (8.25 cms) which is significantly higher when compared to the control group (6.96 cms) and the SS line in study group (26.33cms) was also higher compared to control group (24.42cms).

Lopez- Cano et al there was a low position of the pubic arch (P T and interspine line distance >75 mm) in 23 cases. The low-pubic-arch group showed a significantly longer inguinal ligament and a greater angle made by the superior border of the supr inguinal space and the inguinal ligament at its medial insertion. Harris and White associated a greater length of inguinal ligament with a higher tendency to develop inguinal hernia.

Farhan et al study revealed that interspinal SS distance and the PT height ST were significantly greater in the individuals with the inguinal hernia.

4. Conclusion

In our study group incidence of low lying pubic tubercle in inguinal hernia was about 76% that is out of 100 patients had low lying pubic tubercle which suggest that people with low lying pubic tubercle are at increased risk of developing inguinal hernia

References