

A rare case which has spina iliaca anterio inferior avulsion fracture

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Abstract: Being seen very rarely among adolescent age group the pelviline spina iliaca anterior inferior (SIAI) avulsion fracture, has been presented with literature review because of a case. Its diagnosis has been made through pelvic radiology and treatment has been carried out by bed resting and analgesia.

Keywords: spina iliaca, anterior inferior, Fracture.

INTRODUCTION

More than 90% of the avulsion fractures are seen in the boys between 14-17 ages old [17,19]. The most important reason for those fractures to be seen frequently on adolescent age group, is the fact that the apophyses in the pelvis and hips recovers later than the apophyses on the other parts of the body. Therefore the 13-17 ages, is the era when one is prone to apophyseal injuries. Another reason is the fact that the weakest part of the skeletal muscular system are epiphyseal plates and apophyses. Muscles, tendons, and ligaments are stronger than bony growth areas. For this reason, injury mechanisms that would normally cause muscle strains in adults may lead to serious growth center injuries in youth [8]. The pelvis avulsion fractures forming at the tendon bond points of apophyses which are not yet healed up, form by a similar mechanism as the musculotendinous wounding of matures. The pelvis avulsion fractures forming by the immediate spasm of the muscle bond to apophyse can be determined easily through direct radiography but sometimes fractures can not be diagnosed. Therefore CT and MRI help for the diagnosis of those non-displaced fractures [16]. But the avulsion fracture looks aggressive in the MR displays and can imitate the tumour and infection [14].

SIAI's ossification process is by looking nearly 14 years old and accomplishing its development at 16 years old [6]. Those secondary ossification centers, can sometimes be evaluated as avulsion fracture [18].

The avulsion fractures of pelvis generally forms in the adolescent age group as a result of rapid

and strong muscular, instant, strong, unbalanced muscle spasms during sportive activities [1,4,10,15].

In the literature, there are few case published about the rectus femoris long head's avulsion fracture which consists SIAI. The avulsion fractures are defined among matures just like the young sportsmen [20].

CASE PRESENTATION

While the boy of 13 years old was playing football, he felt an instant and strong ache developing in his groin area. Later on a persistent ache has developed at the upper part of his left femur's upper external part, which gets stronger by movement. He couldn't lay on his leg. 4 hours later the experienced trauma, the left hip active and passive flexion movements of the patient who has been examined, was painful. Hip ROM was between normal limits. There was palpation sensibility on the lateral surface of the hip joint. His neurovascular examination was normal. The avulsion fracture of rectus femoris' long head that is bond to anterior inferior iliac spine on superior lateral of the acetabulum has been determined at the direct radiological examination (Figure 1). No abnormality has been determined when the counter joint was evaluated.

The patient's treatment has been planned conservatively. Bed rest and basic analgesic treatment has been recommended. After 2 weeks of bed rest made to stand up step by step with crutches. At the physical examination made 3 weeks later, hip ROM was exact and painless. At the control examination of 6 months later it was seen that the patient has obtained to a normal physical activity.



Fig-1: Radiological examination

DISCUSSION

The apophys wounding of pelvis are increasing day by day as children and adolescents are participating more in athletic races [2,9]. This case is the only avulsion fracture of the pelvis in the last 10 years in our clinic.

Rectus femoris reflected head's avulsion fracture which consists anterior inferior iliac spine, has been informed generally on adolescents. Rossi et al. [5] has collected the graphics of 203 adolescents who have pelvis avulsion fracture and stated that 45 injuries to consist SIAI, 109 injuries to ischial tuberosity (IT), 39 injuries to anterior superior iliac spine (SIAS), 7 injuries to symphysis pubis, 3 injuries to iliac bone. Metzmaker et al. [13] have indicated the AIIS rate among the patients with pelvis avulsion to be 20%. Porr et al. [12] in a study they made, have found that the pelvis avulsion fracture rates among adult and adolescent patients as SIAI 19.7%, SIAS 28.8%, in pubic bone 1.5%, in acetabulum 1.5% in iliac bone 15.2% in ischial tuberosity as IT 33.3%.

Even though the avulsion fractures of pelvis are seen too frequently in adolescent athletes it can be seen in matures as well. Though it can form in adults after an acute trauma, it forms generally after repetitive traumas. The avulsion injuries seen at adults, is generally related only with the soft tissue and MRI is very beneficial in showing those lesions [16]. Taking bone grafting from the iliac crest, possesses risk for adults about the avulsion fracture[12].

The role of apophysite in avulsion fracture of pelvis, has been argued [9,7]. It has been asserted that the apophysite can be a risk factor in avulsion fractures. Porr et al. [12] have encountered apophysite findings in

6 of 48 cases who have that sort of injury in a study they did. There was no finding about apophysite existence in our case before.

The patients with pelvis avulsion fracture, appeal with the complaint of local pain, sensibility, difficulty in walking during the performance of sports which require rapid and strong muscle spasm [12].

In the diagnosis anamnesis, physical examination and radiology are made use of. Typically the patients with avulsion fracture gives anamnesis which includes strong muscle spasm during sportive activity. Injury occurs when the footballer misses the ball or when encounters with a strong obstacle during the shooting [3,5,13]. The avulsion fracture diagnosis is made nearly all the cases with direct radiography. But in certain suspicious cases BT,MRI and bone scintigraphy can be used as well. In MRI, avulsion fracture looks aggressive and can imitate tumour and infection [14].

During the treatment of SIAI avulsion fractures there is an agreement that the conservative treatment could be sufficient [9]. But in cases where no sufficient recovery has been obtained and painful cases surgical treatment is applied [11]. For the patients whom conservative treatment has been applied the most frequently encountered complications are exocytosis formation, nonunion and continous pains [6].

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