Case Report

Myositis ossificans of the pubic region presenting as a rare variant of athletic pubalgia: A case report

Mahipal Singh Thakur[1], Sachin Reja[2], Dushyant Rohit[3]

From [1]Tutor, Bundelkhand Medical College, [2]Consultant, Department of Orthopaedics, Balaji Hospital, [3]Associate Professor, Department of Surgery, Bundelkhand Medical College, Sagar, Madhya Pradesh, India

ABSTRACT

Athletic pubalgia is a frequent cause of chronic groin pain in athletes; however, rare pathological entities may mimic its presentation and delay diagnosis. Myositis ossificans (MO) is a benign, heterotopic ossification disorder typically occurring in large muscle groups following trauma. Pubic region involvement is exceptionally uncommon and may clinically resemble chronic athletic pubalgia, soft tissue tumors, or osteogenic malignancies. We report a case of a 21-year-old female track and field athlete presenting with a 2-year history of progressive pubic pain refractory to conservative management. Over the past 6 months, she developed a hard, progressively enlarging mass extending into the labia majora, significantly limiting athletic performance and daily activities. Radiological evaluation revealed a mature heterotopic ossified mass in the parasymphyseal region, completely separate from the pubic bone. The patient underwent complete surgical excision through a multidisciplinary approach. Histopathology confirmed mature MO with a characteristic zonation pattern. Postoperatively, she experienced immediate symptom relief and returned to sport within 2 months. This case highlights an unusual presentation of MO mimicking refractory athletic pubalgia and emphasizes the importance of early imaging and surgical management in selected cases.

Key words: Athletic pubalgia, Differential diagnosis, Groin pain, Heterotopic ossification, Myositis ossificans, Pubic symphysis, Sports injuries

Athletic pubalgia is a well-recognized cause of chronic groin pain in athletes engaged in running, kicking, and jumping sports. It is typically associated with injury or overload of the rectus abdominis–adductor longus aponeurotic complex at the pubic symphysis, resulting in chronic exertional pain and functional limitation [1,2]. Although most cases respond to conservative management, persistent symptoms may prompt evaluation for alternative etiologies. Myositis ossificans (MO) is a benign, non-neoplastic condition characterized by heterotopic bone formation within soft tissues, usually following trauma or repetitive microtrauma [3]. It most commonly affects large muscles such as the quadriceps and brachialis. Pubic region involvement is exceedingly rare, and extension into the labia majora has not been frequently documented in the literature, making diagnosis challenging.

The rationale for reporting this case lies in its unusual anatomical presentation, its ability to closely mimic refractory athletic pubalgia, and its potential to be misdiagnosed as a malignant soft tissue tumor. Awareness of this entity is essential to avoid prolonged ineffective treatment and delayed definitive management [4]. This report highlights diagnostic challenges, radiological characteristics, surgical management, and histopathological confirmation of MO in an atypical pubic location.

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CASE PRESENTATION

A 21-year-old female competitive track and field athlete presented with a 2-year history of progressively worsening pubic pain. The pain was initially mild and activity-related but gradually intensified, limiting her ability to run and perform jumping activities. Despite prolonged conservative management including physiotherapy, activity modification, and analgesics, her symptoms persisted without improvement. Over the preceding 6 months, she noted the development of a firm swelling in the pubic region, which progressively enlarged and extended inferiorly toward the left labia majora. This was associated with increasing discomfort during walking, sitting, and athletic activity.

On physical examination, a hard, fixed, and markedly tender mass was palpated over the parasymphyseal

Correspondence to: Dr. Mahipal Singh Thakur, Tutor, Bundelkhand Medical College, Sagar, Madhya Pradesh, India. E-mail: mahipalsinghthakur123@gmail.com

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Figure 1: X-ray pelvis

region, extending into the left labial tissue. Pain was exacerbated by resisted hip adduction and flexion, mimicking athletic pubalgia. No systemic symptoms or neurovascular deficits were noted.

Laboratory investigations, including complete blood count, serum calcium, phosphate, and alkaline phosphatase, were within normal limits. Pelvic radiography revealed a well-circumscribed ossified mass adjacent to the pubic symphysis (Fig. 1). Magnetic resonance imaging (MRI) demonstrated a mature heterotopic ossified lesion located in the soft tissue of the parasymphyseal region, clearly separated from the underlying pubic cortex, with no marrow involvement or aggressive features (Fig. 2).

Given the progressive symptoms, mechanical limitation, and radiological findings, surgical excision was planned. A multidisciplinary team comprising orthopedic and general surgeons performed the procedure with the patient in lithotomy position for optimal exposure. A direct anterior pubic incision was made, extending

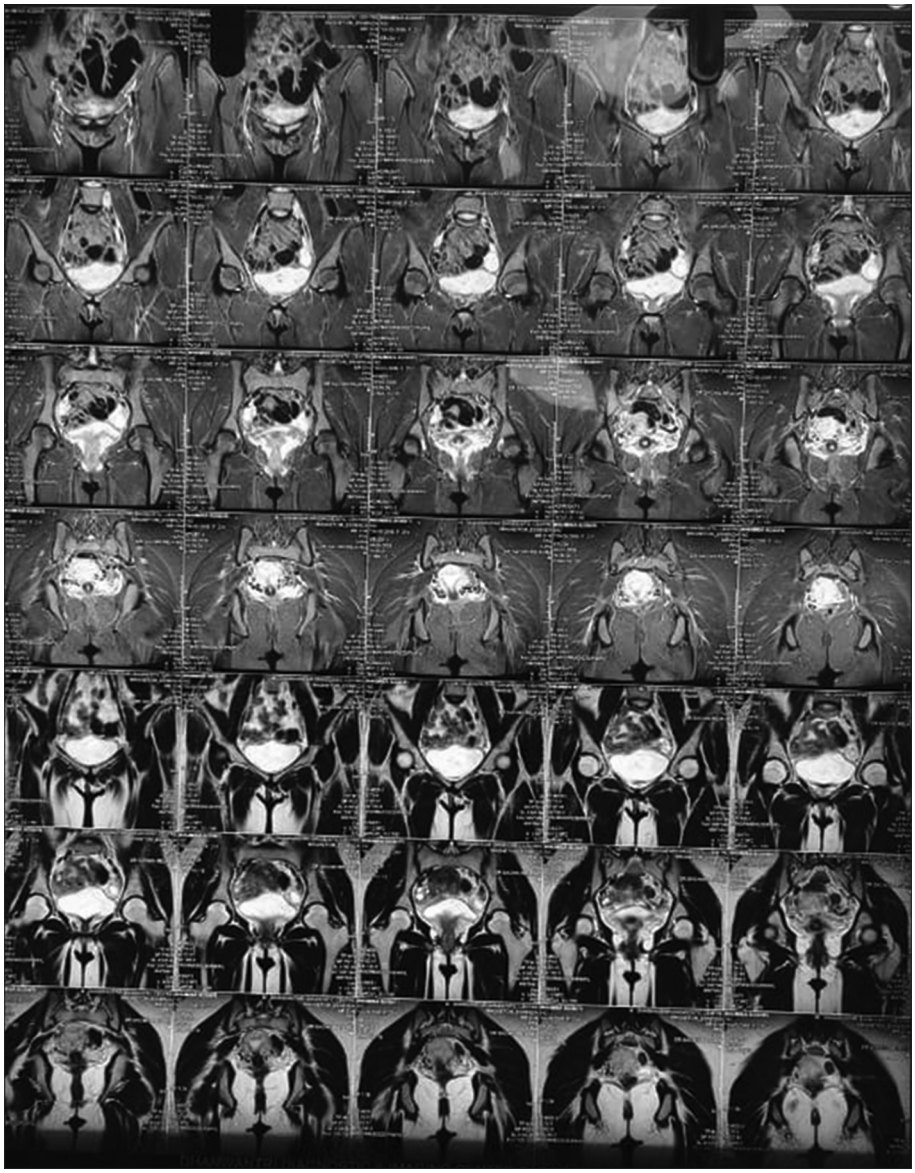


Figure 2: Magnetic resonance imaging-based anatomical localization of the heterotopic ossified mass in the parasymphyseal region extending into the left labia majora. The lesion is clearly separated from the pubic bone, confirming an extraskeletal origin



Figure 3: Excised bony growth

toward the involved labial region. Intraoperatively, a well-encapsulated, hard, ossified mass was identified within the soft tissue, completely independent of the pubic bone. The lesion was carefully excised in total while preserving surrounding neurovascular and urogenital structures.

Gross pathological examination revealed a firm, calcified mass (Fig. 3). Histopathological evaluation demonstrated the classic zonation pattern of MO, characterized by peripheral mature lamellar bone, intermediate osteoid formation, and a central fibroblastic zone without atypia or malignant features, confirming the diagnosis [5].

Postoperative recovery was uneventful. The patient experienced immediate relief from mechanical pain and resumed progressive rehabilitation. She returned to full athletic activity within 2 months without recurrence.

DISCUSSION

MO is a reactive process of heterotopic ossification that typically follows trauma, although cases without clear injury have been reported. Repetitive microtrauma in athletes has been proposed as a key pathogenic mechanism, leading to fibroblastic proliferation and aberrant osteogenic differentiation [6].

The present case is unique due to the rare localization in the pubic region with extension into the labia majora. Such presentation poses a diagnostic challenge as it closely mimics chronic athletic pubalgia, osteitis pubis, vulvar soft tissue tumors, and even sarcomas. Misinterpretation may lead to prolonged conservative treatment and delayed diagnosis.

Radiological evaluation plays a critical role in distinguishing MO from malignant lesions. On MRI, mature MO typically appears as a well-defined lesion with peripheral ossification and absence of medullary continuity with the underlying bone, as seen in this case. Computed tomography is considered superior in demonstrating the characteristic peripheral ossification pattern [7].

Histopathological confirmation remains the gold standard for diagnosis. The presence of the zonation phenomenon is a key distinguishing feature that helps differentiate MO from extra-skeletal osteosarcoma, which lacks maturation at the periphery and demonstrates cellular atypia [8].

Management of MO depends on lesion maturity and symptom severity. Conservative management is generally recommended in early stages; however, mature lesions causing mechanical symptoms or functional impairment may require surgical excision. In this case, complete excision resulted in immediate symptom relief and return to sport, consistent with previous reports of successful outcomes following surgical management of mature lesions [9].

This case underscores the importance of considering rare differential diagnoses in athletes with chronic groin pain refractory to standard treatment. Early imaging and awareness of atypical presentations can prevent misdiagnosis and unnecessary prolonged morbidity.

CONCLUSION

MO of the pubic region is a rare but important differential diagnosis for chronic athletic pubalgia. Progressive development of a palpable mass should prompt early imaging to exclude heterotopic ossification or neoplastic processes. Surgical excision of mature lesions offers definitive diagnosis and excellent functional outcomes. Increased awareness among sports medicine clinicians is essential to avoid delayed diagnosis and optimize patient recovery.

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