A forty-six-year-old man with right lateral chest pain was admitted to our clinic. He had a history of a sports injury in the same region that had occurred while wrestling three months previously. Computed tomography of the chest showed a cystic rib lesion of 6 cm in diameter with calcific inclusion. The lesion was removed with excisional biopsy. The result of the pathological examination was reported as fibrous dysplasia. The patient was uneventfully discharged on the third postoperative day. At the 12-month follow-up, patient was fully recovered and no recurrence was detected. Fibrous dysplasia is a common benign congenital lesion that can involve one or more bones. In this article we present a case of monostotic fibrous dysplasia of the rib which developed after a sports injury. This is the first case of its kind reported in the literature.

Key words: Fibrous dysplasia; monostotic; sports injury.

CASE REPORT

A forty-six-year-old man with severe right lateral chest pain was admitted to our clinic. He had a history of sports injury in the same region as a result of wrestling three months previously. After the injury, a slow-growing, painful mass was revealed. He had no job which subjected him to a risk of chest injury and had no history of cancer or radiation therapy. Upon physical examination, a 3 cm diameter painful mass was palpated over the angle of the ninth right rib. Chest radiography showed a 5 to 6 cm expansive lesion of the rib with a central radiolucency and a sclerotic border in the posterior ninth right rib. Computed tomography of the chest showed a cystic rib expansion with a diameter of 6 cm featuring calcific inclusion (Figure 1). Complete blood biochemistry was normal, and no other bone lesion was found on a whole body roentgenogram.

The patient was operated for his painful lesion and to establish a definitive diagnosis. The lesion was...
completely excised with a 10 cm incision, and the rib was partially resected with surrounding soft tissue. The pathology was reported as a fibrous dysplasia (Figure 2). The patient was discharged uneventfully on the third postoperative day. At the 12-month follow-up, the patient was fully recovered, and no recurrence was detected.

**DISCUSSION**

Monostotic rib lesions are usually slow-growing and asymptomatic. They may cause pain, soreness, compressive symptoms, and pathologic fractures if they become large.[1-3]

The basic pathophysiologic process postulated in FD is developmental failure in the remodeling of primitive bone to mature lamellar bone along with a failure of the bone to organize in response to mechanical stress.[1-3] In addition, the mineralization of the immature matrix is abnormal.

The etiology of the disease has been linked with a mutation in the alpha subunit of the stimulatory G protein (G\(_s\)). This gene is located at chromosome 20q13.2-13.3.[2] It is unclear whether FD has an autosomal dominant or autosomal recessive character.[3]

Although trauma is not a proven etiologic factor in FD, there have been some reports about cases of FD in which the rib had a history of trauma.[3-5] McDermott et al.[3] reported two cases of rib FD with a history of trauma in his series of 11 cases of fibro-osseous lesions of the rib. Nadir et al.[4] reported one patient with coexisting FD and a bone cyst of a rib after labor trauma. Ferrando et al.[5] reported a case of post-traumatic costal fibrous dysplasia. Our patient also had a history of sports injury from three months previously. However, we have to emphasize again that there is no certain evidence for an interrelationship between trauma and fibrous dysplasia, and the relationships mentioned above may be only be incidental.

Absolute diagnosis is difficult in monostotic FD, and a total excisional biopsy, which can be carried out safely, is necessary for a monostotic rib lesion. Some bone lesions, such as Paget's disease, simple bone cysts, nonossifying fibromas, osteofibrous dysplasia, adamantinoma, and low-grade intramedullary osteosarcoma may suggest FD.[2]

For rib lesions, total excisional removal of the monostotic lesion is the first choice of treatment in order to establish a definitive diagnosis, prevent complications, such as malignant transformation and pathologic fracture, and relieve compressive symptoms, for example, chest pain, dyspnea, dysphagia, and thoracic outlet syndrome.

The prognosis is generally good in patients with FD.[2] The natural course of FD depends on the form of the presenting disease and occurrence of complications. The prognosis is much better in the monostotic form of the disease.

In conclusion, FD is a common benign tumor of the rib and other bones. Although, it is known as a congenital disease, it may occur after trauma and sports injuries.

**Declaration of conflicting interests**

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.
**Funding**

The authors received no financial support for the research and/or authorship of this article.

**REFERENCES**