

OLECRANON STRESS FRACTURES: EPIDEMIOLOGY, CLASSIFICATION, AND CURRENT MANAGEMENT

**Ana Catarina Borges¹, Inês Morais¹, Andreia Morgado¹, Sara Martins¹,
Carolina Paiva¹, Maria João Sousa¹, José Eduardo Sousa¹,
Álvaro Vicente Brandão², Filipe Carvalho¹**

¹ Centro de Reabilitação da Região Centro - Rovisco Pais, Portugal

² Unidade Local de Saúde de Viseu Dão Lafões, Portugal

e-mail: ana.catarina.bfo@gmail.com

Background and Aims

Stress fractures are rare injuries, accounting for 0.8% of fractures in adolescent sports activity. The prevalence of olecranon fractures in throwing athletes seems to be on the rise, accounting for 58% of stress fractures among baseball players. The mechanism of injury in throwing athletes has been attributed to forces similar to overload extension in valgus. These injuries represent a challenge from the standpoint of prevention, treatment, and rehabilitation.

Methods

A search in the PubMed and Cochrane databases was conducted using keywords and their respective MeSH terms, including "Stress fractures," "Elbow fractures," and "Sports." The search focused on systematic reviews, meta-analyses, and randomized clinical trials from the past 20 years. Eight articles were included: 3 narrative review articles, 1 systematic review, and 4 case reports.

Results

Elbow stress fractures predominantly occur in the olecranon and mainly affect young athletes. Baseball is the sport most frequently associated with these injuries, although they have also been reported in javelin throwers, football players, and softball players. Furushima et al. classify these fractures into five types based on the fracture line: physeal, classic, transitional, sclerotic, and distal. The diagnosis is difficult, with magnetic resonance imaging being the most effective test. Simple radiographs may not initially show fractures but can identify indirect signs, such as the formation of osteophytes in the posteromedial olecranon fossa. Treatment can be conservative or surgical, with most cases treated surgically, usually after failure of conservative treatment. Non-surgical treatment involves rest and progressive rehabilitation, while the most common surgical treatment is internal fixation with screws. Both approaches have high return-to-sport rates.

Conclusion

Olecranon stress fractures are uncommon but important injuries in throwing athletes, with a rising prevalence in baseball. Early diagnosis, aided by MRI, is crucial for prompt treatment and rehabilitation. Both treatment modalities have good return-to-sport rates, despite potential surgical complications.

Keywords: Olecranon, stress fracture, sports