

# Bilateral Patellar Cubiti: A Case Report

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## Abstract

Patella cubiti is a rare anomaly of the elbow, which can be unilateral or bilateral. It is a sesamoid bone in the triceps brachii tendon. The patella cubiti can be asymptomatic or symptomatic, with limitation of motion, stiffness or pain. Radiography shows a smooth well-corticated ossicle projected posterior to the elbow joint. This can be mistaken for a post-traumatic non-union of an old fracture of the olecranon tip. Radiology data and clinical examination are both important and key to an accurate diagnosis. In the case of an abnormal proximal migration of the patella cubiti, a ruptured triceps brachii tendon should be considered.

**Keywords:** elbow, elbow anomaly, rupture of triceps brachii tendon

**P**atell cubiti is a patella-like sesamoid bone in the triceps brachii tendon.<sup>1</sup> Its etiology is unknown and theories include congenital, developmental or traumatic injury. Normal radiography shows an ossicle projected posterior to the elbow joint. This case study aims to increase the awareness about the existence of patella cubiti.

## Case report

A 39 year-old-man with acute left elbow pain after a motor vehicle accident was admitted. At presentation, he was found to have swelling and tenderness at the distal third of the caudal aspect of the left elbow. Examination revealed tenderness with a palpable gap at the triceps brachii tendon insertion, proximal to the olecranon. The triceps brachii tendon of the left elbow joint had full function and full range of motion.

Radiography of both elbows showed a smooth well-corticated ossicle projected posterior to the elbow joints on lateral views. There was a proximal migration of the left ossicle when compared to the right one. There was associated mild soft tissue swelling at the posterior aspect of the left elbow joint (Figure 1). Findings suggested ruptured triceps brachii tendons insertion of the left elbow. The right elbow showed no radiology or clinical abnormality (Figure 2). Because the elbow function was not limited, conservative treatment including rest and oral analgesics were administered. However, he did not present for a follow up. No other investigations, including MRI or ultrasound, were performed.

## Discussion

Patella cubiti is a rare anomaly of the elbow, which can be unilateral or bilateral. It is a sesamoid bone in the triceps brachii tendon.<sup>1,2</sup> The other accessory bones around the elbow are fabellae cubiti (bilateral antecubital ossicles) and the medial or lateral epicondyle.<sup>3</sup>

Patella cubiti may be asymptomatic or can cause symptoms including limitation of motion, stiffness or pain. Some patients are diagnosed incidentally following a trauma.<sup>4</sup> Most patients described in literature are male. Since males are more likely to have injuries and have more radiology studies of the elbow after injuries to this area, the difference in gender may not be significant.<sup>2</sup>

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**Figure 1:** Lateral radiograph of the left elbow of a 39-year-old male shows proximal migration of the left patella cubiti with associated mild overlying soft tissue swelling.



**Figure 2:** Lateral radiograph of the right elbow of the same patient shows patella cubiti.

Its etiology is unknown with congenital, developmental or traumatic injury theories. Kattan<sup>2</sup> and others supported a congenital origin of patella cubiti as a sesamoid in the triceps tendon. The developmental theories showed separation of the epiphyseal center of the olecranon in early childhood leading to independent development of this center.<sup>5</sup> According to developmental theories by Van Demark<sup>6</sup>, growth disturbance occurring at a particular age could lead to the prevention of certain epiphyses of the body from uniting the metaphyses. The traumatic theories of patella cubiti have been reported by many authors. Habbe<sup>7</sup> suggested avulsion of the olecranon epiphysis with periosteal stripping of proximal ulnar diaphysis. O'Donoghue<sup>8</sup> reported a case where trauma caused a fracture through the cartilaginous epiphyseal growth plate of the patella cubiti which was surgically fixed, whereas Levine<sup>9</sup> reported bony fracture through the patella cubiti which was surgically excised.

The radiology findings of patella cubiti should be differentiated from post-traumatic non-union of an old fracture of the olecranon tip. Patella cubiti is well delineated with a smooth intact cortical surface of the olecranon, while non-union of old fractures should show an irregular surface with sclerotic margin of the parent olecranon and distal fracture fragments. Other differential diagnosis include unfused olecranon epiphysis in young patients and hydroxyapatite deposits within the triceps tendon.

A rupture or avulsion of the triceps brachii tendon is a rare injury, first reported by Partridge<sup>10</sup> in 1968. There are many

causes of a ruptured triceps tendon such as traumatic injury, which is usually seen in young, healthy patients and other systemic diseases such as systemic lupus erythematosus (SLE), rheumatoid arthritis (RA), chronic renal failure, secondary hyperparathyroidism, hypocalcemic tetany, Marfan syndrome, chronic acidosis, osteogenic imperfecta, and anabolic steroid use. Other local conditions which were reported to cause rupture include xanthoma, hemangioma, endothelioma, injection of corticosteroids, attrition changes from degenerative arthritis and olecranon bursitis.<sup>11,12</sup>

### Study limitations

The study was limited due to no evidence of further imaging as there was no follow up of the patient.

### Conclusion

Patella cubiti is a patella-like sesamoid bone in the triceps brachii tendon. Patients can present asymptomatic or symptomatic including limitation of motion, stiffness or pain. Radiology features of normal patella cubiti show an ossicle project posterior to elbow joints. To avoid diagnosis pitfalls, radiologists and clinicians should keep in mind that associated proximal migration of ossicles should raise clinical suspicion of a ruptured triceps brachii tendon. Suspicion should be heightened when a patient has a known clinical history of prior injury with abnormal physical examination.

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