Unusual Cases of Elbow Locking Due to Synovial Cysts
A Report of Two Cases


Abstract

Sudden and intermittent locking of the elbow joint is a common complaint among patients who commonly demonstrate degenerative changes in the elbow. Common causes of elbow locking include acute trauma, osteochondritis dessicans, synovial chondromatosis, and osteoarthritis. Two cases involving patients with symptoms of elbow locking secondary to reasons other than loose bodies within the joint are presented: a synovial cyst within the posterior aspect of the elbow, specifically within the olecranon fossa causing their painful symptoms of locking. These cases present unique features in the diagnostic approaches of elbow locking due to the unexpected association with synovial cysts. We believe that these findings can shed new light on the pathogenesis of this disease.

Sudden and intermittent locking of the elbow joint is a common complaint among patients who commonly demonstrate degenerative changes in the elbow. Locking is usually attributed to loose bodies within the joint. There are many reasons why loose bodies may form within a joint, and the common reasons are as follows:
1. Acute trauma,
2. Osteochondritis dessicans,
3. Synovial chondromatosis, and
4. Osteoarthritis.

These examples of elbow locking are all secondary to osteochondral fragments occupying the joint space secondary to fragmentation of the cartilage in the joint lining. Very few other unusual diagnoses for elbow locking are reported. In a literature search of “elbow locking,” there was only a single case report of unrecognized osteochondral radial head fracture reported as an unusual cause of locking.1

Two cases are presented that involve patients with symptoms of elbow locking secondary to reasons other than loose bodies within the joint. At operation, both patients were discovered to have a synovial cyst within the posterior aspect of the elbow, specifically within the olecranon fossa causing their painful symptoms of locking. These findings as a cause of elbow locking have not been reported in the literature.

Case 1

A 15-year-old male presented to the upper limb unit with a 2-month history suggestive of recurrent locking of his left elbow joint. He also complained of severe pain and elbow swelling. Initially limited to occasional episodes, the frequency of locking had steadily increased eventually reaching a point that caused daily discomfort and interference with routine activities. There was no history of trauma or inflammatory joint disease.

On examination, forced extension of the elbow, in combination with digital pressure over the olecranon fossa, initiated pain in the region of the fossa, but there was no palpable loose body and no evidence of joint instability. Plain radiographs of the elbow were reported as normal.

The decision was made to undertake elbow arthroscopy, and a large, tense, pedunculated synovial cyst was noted arising from the superomedial corner of the olecranon fossa. The size of the lesion measured 2 cm by 1.5 cm by 1.5 cm. With flexion and extension of the elbow, the cyst was seen to
swing directly into the olecranon fossa and simulate locking (Fig. 1). Owing to its large size, open excision of the cyst was performed, and the tissue sent for histology.

Microscopy (Fig. 2) showed the cyst wall to be composed of hyperplastic synovial tissue with a mild chronic inflammatory cell infiltrate and mild myxomatous degenerative change. In the postoperative period, the patient made an uneventful recovery without any further episodes of locking.

Case 2
A 44-year-old, left hand dominant, male presented with symptoms of pain and intermittent locking in the left elbow. His symptoms had become significant enough to affect his regular work as an agricultural engineer and other activities, which included motocross competition. Pain was elicited on forced extension and flexion of the elbow with a little restriction on supination.

Radiographs demonstrated some loose bodies anterior to the elbow joint. This patient, therefore, underwent a left elbow arthroscopy. At arthroscopic examination, a large cyst like lesion in the posterior aspect of the elbow in the medial corner of the olecranon fossa was found. This was found to simulate elbow locking on forced extension as the cyst occupied the posterior aspect of the joint.

The cyst was openly excised and measured (4 cm by 1 cm by 0.6 cm) and was sent for histopathological examination. Microscopic evaluation revealed the cyst to be lined by synovium and with cavitating myxomatous degeneration in its wall (Fig. 3).

Discussion
Both cases described in this article are unique and have not been described previously in the literature. Ganglions and synovial cysts around the elbow are known to be a common phenomenon. There are numerous case reports in the literature of ganglion and cysts arising from the elbow causing compressive neuropathies of the radial, posterior interosseus, and ulnar nerve. Other symptoms reported due to cysts include snapping elbow. The literature also reports ganglion, and these compressive neuropathies are more common in patients with inflammatory joint disease. The literature suggests that these have been safely excised via either an open method or arthroscopically.

Ganglion and synovial cysts have been described arising in other joints causing symptoms of locking. Most commonly this has been reported in the knee joint with ganglion cysts arising either from the anterior cruciate ligament or from the fat pad leading to an inability to extend the joint.

Many theories have been proposed over the years regarding the pathogenesis of ganglion formation. Hippocrates provided the earliest description suggesting it was “a knot
of tissue containing mucoid flesh.” Modern ideas suggest that ganglia develop from connective tissue by myxomatous degeneration.

In Case 1 the patient, a teenager, presents with symptoms of locking; this is particularly unusual in this paediatric age group. The most common cause in the developmental ages is osteochondritis dessicans, which would demonstrate radiographic changes. In both cases that have been described above, the elbow was assessed arthroscopically, since this was felt to be an appropriate approach in the hands of an experienced arthroscopists. On each occasion, this was followed by an open approach in an attempt to ensure completeness of excision and thereby reduce the risk of recurrence.

Having performed an extensive search of the literature, recurrent locking of the elbow due to synovial cysts either in the younger or middle aged age group has not been reported. Despite its rarity, the investigators would suggest that this diagnosis should be considered where the patient has described symptomatic locking and yet a preoperative cause has not been forthcoming.

Disclosure Statement
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References