

Case Report

Osteochondroma - Neck of Humerus – Case Report

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Abstract:

Overgrowth of cartilage and bone around the growth plate is known as osteochondroma. These are developmental lesion of growth plate and not true neoplasms and arise from separation of fragment of epiphyseal growth plate. These lesions mostly commonly arise from the metaphyseal region of the bone. Solitary osteochondromas comprise of medullary and cortical bone with a cartilaginous cap. The most common affected long bone is the femur (30%) with distal lesions being more common than proximal. Tibia and humerus is second most common site followed by flat bone involvement (Pelvis, Scapula). 34 year old female presented with pain, swelling over left shoulder since 14 years along with progressive restriction of movement (mainly internal rotation). Patient underwent radiological investigations and was diagnosed with osteochondroma of proximal humerus with neurodeficit (positive regimental badge sign). Surgical removal of osteochondroma was done. Sample was sent for HPE which confirmed the diagnosis. Osteochondroma should be treated with total excision. Recurrences can be seen due to insufficient removal of osteochondromas. Inadequate removal of tumour may result in persistent post operative pain. Surgical treatment is summarized in planning the approach based on CT and, or MRI.

Key words : Osteochondroma, Humerus, Exostosis.

Introduction:

Overgrowth of cartilage and bone around the growth plate is known as osteochondroma. These are developmental lesion of growth plate and not true neoplasms and arise from separation of fragment of epiphyseal growth plate (1). Osteochondroma is a benign tumour and is the most prevalent and common bone tumour, accounting for 10% to 15% of all bone tumours and 20% to 50% of benign bone tumours(2). Majority of the osteochondromas are solitary but about 15% of cases present with multiple tumours (3). Multiple osteochondromas arise from multiple hereditary exostoses (HME), an autosomal dominant disorder (4).

Case report:

A 34 year old right hand dominant female

presented with complaints of pain and swelling over left shoulder since 14 years. Patient gave alleged history of trauma to her left shoulder 14 years back following which she developed minor swelling over left shoulder which was initially the size of a peanut and was painless. Over a period of 14 years the swelling has progressively increased up to the size that of a lemon. Since past 6 months the swelling has become painful and patient is complaining of restriction of range of motion of left shoulder joint. There was no history of trauma, night pain, fever, sweats, chills, weight loss or any swelling in other parts of body. The family history and past medical history were unremarkable. Physical examination revealed a well defined immobile palpable mass, bony hard in consistency, on the antero-medial aspect of head of humerus measuring 6x3x3 cm with

mild tenderness present over the swelling. Swelling was prominent on external rotation of the left shoulder. There was no pulsation or thrill on auscultation. Range of motion of the shoulder was terminally restricted i.e. internal and external rotation. Regimental badge sign was positive on left side. Muscular functions of the arm, forearm, elbow joint and wrist were normal. Plain radiographs and computerized tomography of left shoulder revealed pedunculated solitary osteochondroma arising from neck of humerus. After informed consent, patient was planned for surgery.

The tumour was exposed using Anterior (Deltopectoral) approach. Superficial soft tissue dissection was done and tumour was exposed and freed from surrounding soft tissue. Tumour was excised with osteotome and mallet. Care was taken to avoid any injury to Axillary nerve and to avoid any fracture of proximal humerus. The remaining portion of stalk was curetted and was given lavage with hydrogen peroxide and normal saline. Negative suction drain was inserted and closure was done in layers. Pendulum exercises and elbow range of motion exercises were started in the first post operative week. Intraoperative sample that was sent for histopathology confirmed the diagnosis of osteochondroma. 3 months post surgery, patient gained full range of motion of left shoulder. Regimental badge sign was negative. The patient was informed regarding publication of the data concerning the case and appropriate consent was taken for the same.

Patients' perspective:

I had visited the hospital for pain and swelling over the left axilla which also caused restriction of movement of my left shoulder. I had a history of fall over my left shoulder 14 years back after which I developed a swelling in my left axilla which I noticed while bathing. At first, the swelling was not painful and did not cause any restriction of movement. I did not seek any medical advice initially but over the past 14 years, the swelling has increased in size and has caused restriction of movement of my left shoulder which has disturbed my day-to-day routine as I am a mother of 2 children. With great attention, the doctors examined me completely. X-rays and CT scans of my left shoulder were done. The doctors gave me and my husband a briefing and emphasized on my condition and potential complications related to it.

They explained to us about the complete surgical procedure and made us aware of the surgical as well as the anesthesiological complications. After the operation, I woke up fine. I had minor pain from the stitches that I had got from the surgical procedure. The doctors showed us the pictures of the tumor that was removed. After 12 days my stitches were removed and I had already started feeling free with no restricted or painful movements with the help of fantastic physiotherapy support. The doctors asked me to visit after 3 months for follow-up and assessed my left shoulder movements. I could see the change in my Xray and was really satisfied with the treatment.

Discussion:

Osteochondromas are fairly frequent, affecting about 3% of the population. The vast majority of these tumours are solitary, non-hereditary lesions and about 15% of them occur in the context of hereditary multiple osteochondromas (HMOs), an autosomal dominant disorder (4). These lesions mostly commonly arise from the metaphyseal region of the bone. Solitary osteochondromas comprise of medullary and cortical bone with a cartilaginous cap (1). A definitive diagnosis of osteochondroma can be made when it shows direct continuity with the cortex as well as the medullary canal of the parent bone which was also seen in this case (5). The long bones constitute the majority of cases (50%), with a 2:1 = lower extremity:upper extremity ratio (2). The most common affected long bone is the femur (30%) with distal lesions being more common than proximal. Tibia and humerus is second most common site followed by flat bone involvement (Pelvis, Scapula). In tibia, proximal tibia involvement is more common than distal tibia (6).

Scapular, clavicular and humeral osteochondromas cause impingement syndrome (7). Literature describes various complications of osteochondroma including cosmetic or bony deformity, pathological fracture of stalk, inflammation of the overlying bursa (bursitis), neurovascular deficit and malignant transformation (1). Humeral metaphyseal osteochondromas have additionally been linked with subscapularis tear, where there is entrapment of axillary nerve and posterior humeral circumflex in the quadrilateral space (8). However in this case there was restriction of movement of the shoulder joint with positive regimental badge sign. Osteochondroma

should be treated with total excision. Recurrences can be seen due to insufficient removal of osteochondromas.

Conclusion:

In conclusion, this presentation of osteochondroma was treated with complete excision by deltopectoral approach. In case of postero medial lesion direct medial approach is used. Inadequate removal of tumour may result in persistent post operative pain. Surgical treatment is summarized in planning the approach based on CT and, or MRI. In

this case, presentation of osteochondroma is at an unusual site that is, neck of humerus with complaints of pain and restriction of movement of left shoulder and positive regimental badge sign without motor deficit of axillary nerve. Complete excision of the tumour was done following which the patient regained painless movement of left shoulder with improvement of hyposthesia over lateral aspect of deltoid region (Negative regimental badge sign)

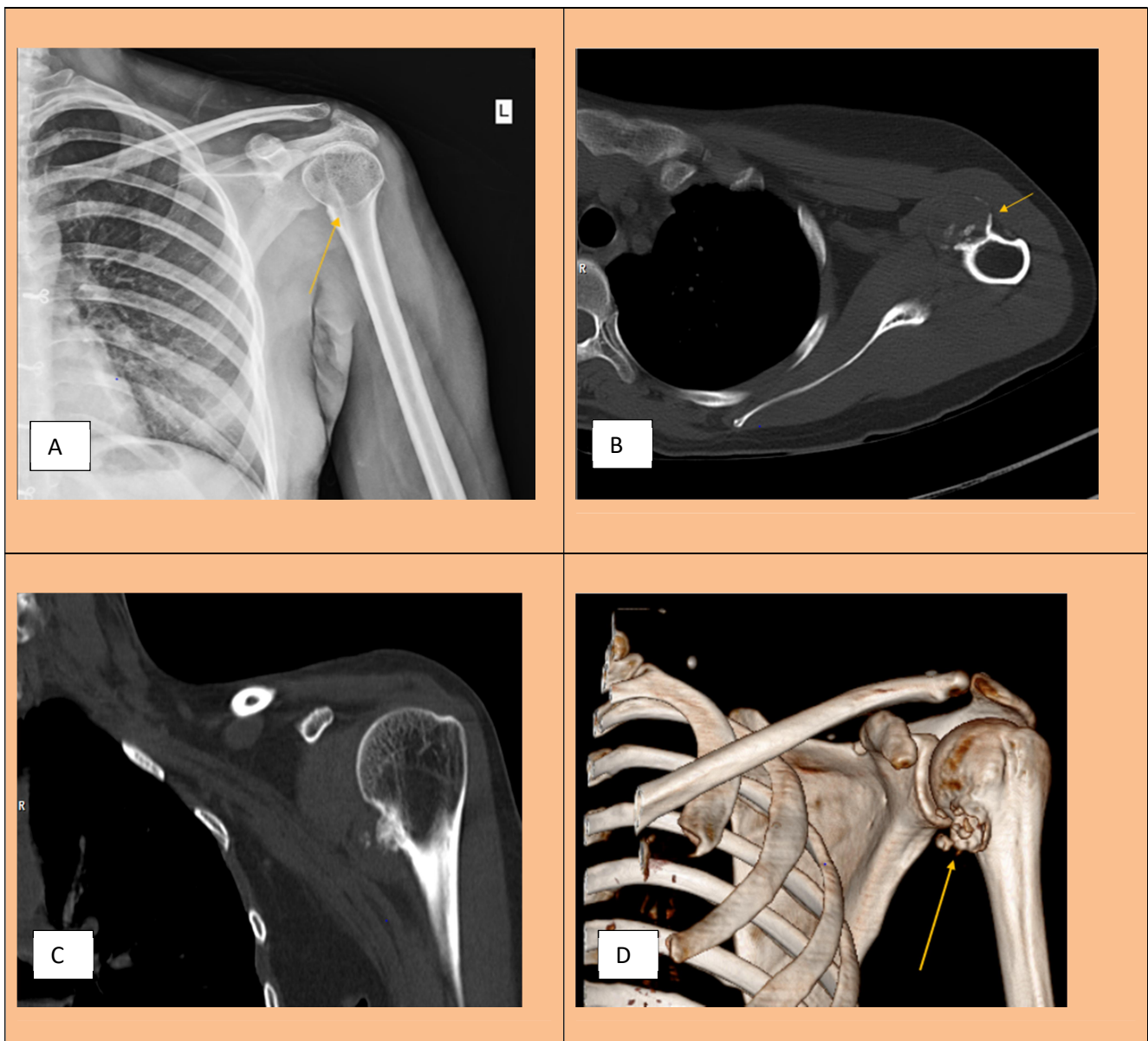


Figure 1. (A) Radiograph showing solitary osteochondroma arising from neck of humerus. (B,C,D,) CT scan of left shoulder showing solitary, pedunculated osteochondroma.

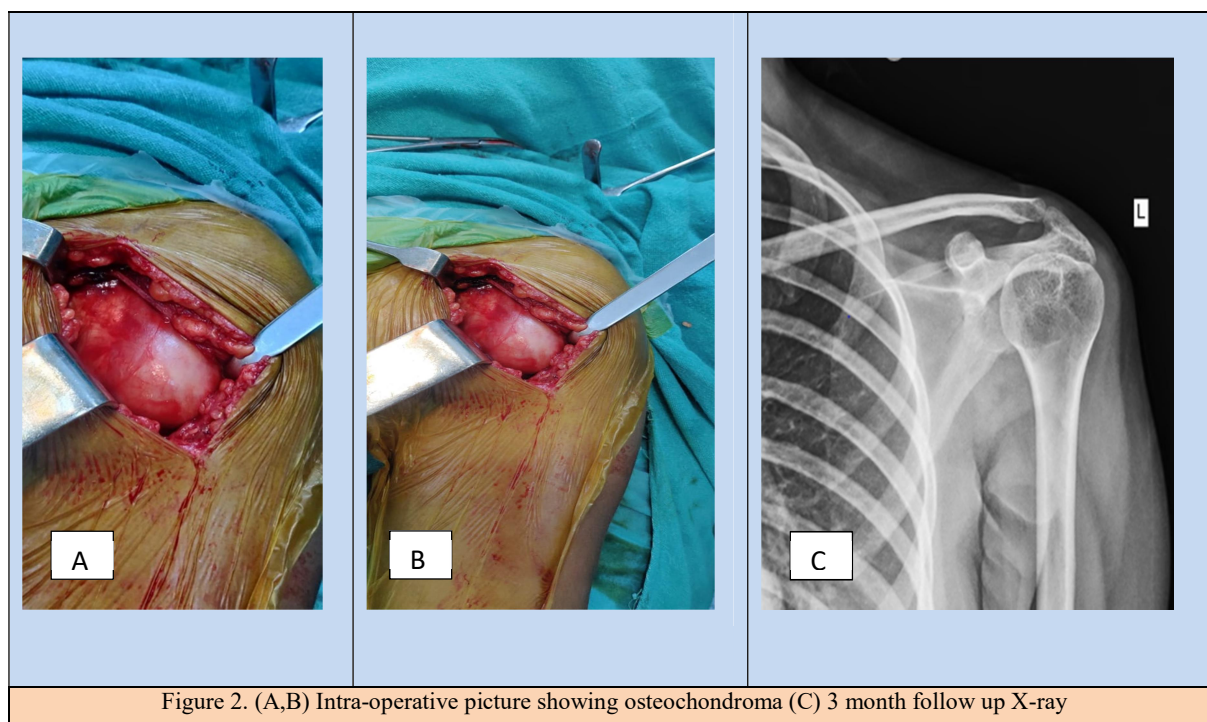


Figure 2. (A,B) Intra-operative picture showing osteochondroma (C) 3 month follow up X-ray

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