DOI: 10.7860/JCDR/2026/82916.22284

Case Report

Orthopaedics Section

Total Shoulder Arthroplasty in a 32-year-old Female with Fibrolipoma: A Case Report

SHASHANK YADAV[1], GAJANAN L PISULKAR[2], DHAIRYA VIJAY VERAGIWALA[3], K NEELAKSH[4], KRISHNA D SAMBARE[5]

ABSTRACT

Fibrolipomas are rare benign soft-tissue tumours composed of mature adipose and fibrous tissue. Their presence in the shoulder joint is exceptionally uncommon. A 32-year-old female presented with progressive right shoulder pain and restricted motion for one year. Imaging and histopathology confirmed the diagnosis of fibrolipoma with joint surface destruction. The patient underwent surgical excision followed by Total Shoulder Arthroplasty (TSA). Postoperative recovery was uneventful, with marked improvement in pain relief and range of motion at the six-month follow-up. This case highlights that although fibrolipomas are benign, they can cause significant articular degeneration, potentially requiring arthroplasty. Accurate diagnosis, preoperative planning, and careful surgical execution are crucial for achieving excellent outcomes in young patients.

Keywords: Benign tumour, Joint degeneration, Shoulder mass, Shoulder pain

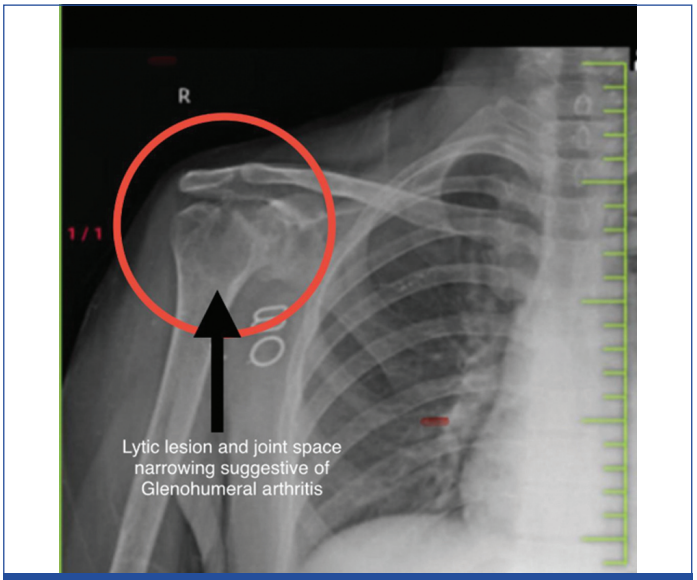
CASE REPORT

A 32-year-old female presented to the orthopaedic Outpatient Department (OPD) with progressive right shoulder pain and reduced range of motion for the past 12 months. The pain was dull, gradually progressive, and exacerbated by overhead activities and lifting heavy objects. It was partially relieved with rest and analgesics but not completely controlled. The patient also reported increased difficulty in performing daily activities such as eating, combing her hair, and dressing. No history of trauma, weight loss, fever, or other constitutional symptoms was noted. On clinical examination, the patient exhibited tenderness over the glenohumeral joint, with visible restrictions in abduction, forward flexion, and external rotation. Muscle strength was reduced due to pain, and there was mild wasting of the deltoid. The neurovascular examination was normal.

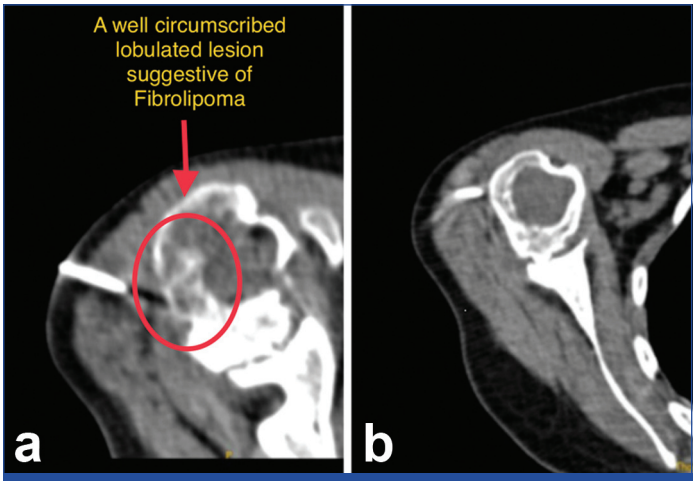
Initial X-rays demonstrated an expansile lytic lesion with joint space narrowing and destruction of the articular surfaces of the humeral head and glenoid cavity [Table/Fig-1]. Magnetic Resonance Imaging (MRI) showed a well-circumscribed, lobulated lesion with heterogeneous signal intensity, primarily hyperintense on T1-weighted and T2-weighted images, consistent with fat content. Interspersed fibrous strands appeared hypointense. There was no evidence of malignant transformation, periosteal reaction, or soft-tissue invasion. MRI also highlighted thinning of the articular cartilage and degenerative changes in the glenohumeral joint [Table/Fig-2].

The patient was placed in the left lateral position under aseptic precautions. A 10 cm curved incision was made through the deltopectoral approach, and the skin, fascia, and soft-tissues were dissected to expose the shoulder joint. The deltoid and pectoralis major were retracted, and the humeral head was dislocated. Intraoperative findings revealed eroded and degenerated cartilage, accompanied by a 5x3 cm necrotic fibrolipomatous mass, which was excised and sent for histopathological examination [Table/Fig-3]. Histopathological examination of the excised specimen demonstrated mature adipocytes interspersed with dense collagen fibers. No atypia, mitotic activity, or malignant transformation was observed, confirming the diagnosis of fibrolipoma [Table/Fig-4].

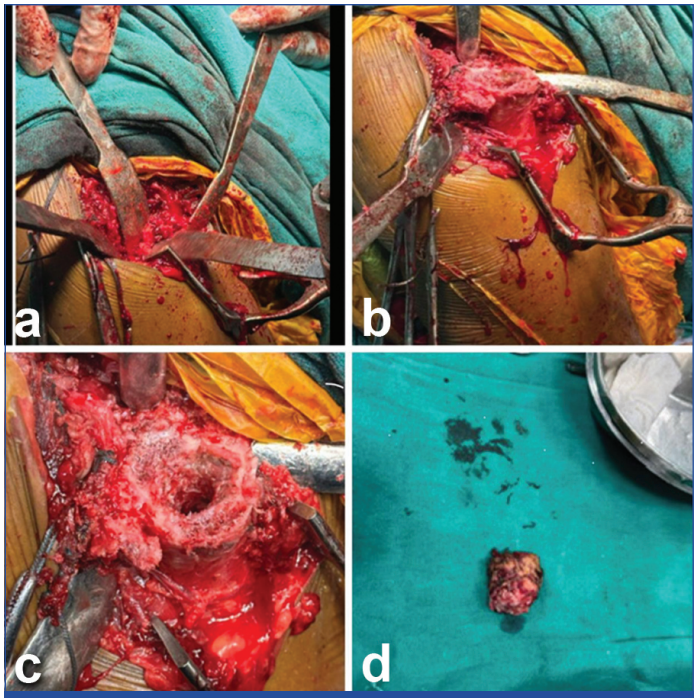
Bone samples showed necrotic changes with fibrous infiltration. A humeral neck cut was made, and the glenoid cavity was exposed, reamed, and prepared. The glenoid component was fixed with bone cement and screws, followed by the preparation of the humerus and trial reduction. A 9 mm stem with a 60 mm spacer prosthesis was implanted. Closure was performed in layers, and the procedure was uneventful. Postoperatively, a radiograph of the right shoulder



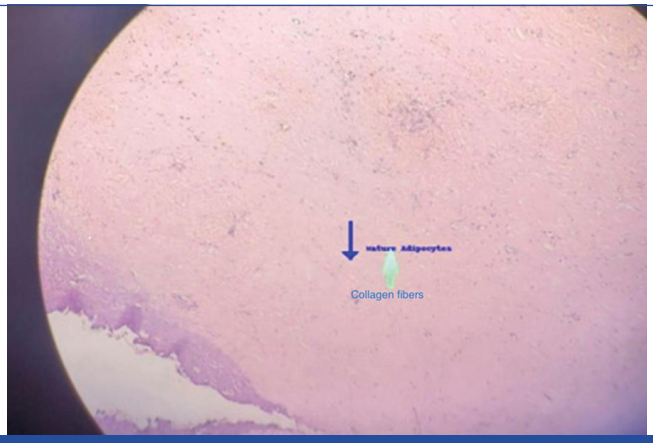
[Table/Fig-1]: AP X-ray of the right shoulder showing loss of humeral head and glenoid contour with articular surface destruction of the glenohumeral joint.



[Table/Fig-2]: MRI right shoulder showed a well-circumscribed, lobulated mass on T2-weighted images, consistent with fat content and interspersed fibrous strands appearing hypointense.



[Table/Fig-3]: a) An intraoperative picture of the right shoulder taken through a posterior deltoid split incision showing proximal humeral neck cut; b,c) Eroded articular surface of humeral head; d) Excised fibrolipoma measuring 5×3 cm sent for histopathological examination.



[Table/Fig-4]: Histopathological examination shows mature adipocytes (blue arrow) and collagen fibres (Green arrow)- eosinophilic fibrous strands representing connective tissue.

was taken, suggestive of TSA [Table/Fig-5]. At follow-up, the patient demonstrated significant improvement in symptoms and functional status. At two months, pain had substantially reduced, and the range of motion had improved, allowing her to perform daily activities. At six months, the patient maintained good shoulder mobility and strength, reporting a marked improvement in quality of life.

[Table/Fig-5]: Postoperative radiograph of right shoulder AP view suggestive of Total Shoulder Arthroplasty (TSA) with prosthesis in situ and satisfactory alignment.

DISCUSSION

TSA is a well-established treatment for severe glenohumeral arthritis, most often performed in elderly patients due to concerns about prosthesis longevity in younger individuals [1,2]. However, when benign tumours such as fibrolipomas cause progressive articular destruction and functional impairment, TSA may be justified even in young patients [3]. Imaging plays a crucial role in diagnosis and surgical planning, especially for tumours involving the rotator cuff muscles or extending into the glenoid [4-6]. MRI is considered the modality of choice, providing detailed information on tumour margins, internal composition, and involvement of adjacent structures [6].

Fibrolipomas that cause mechanical joint degeneration or functional impairment may necessitate surgical excision along with joint replacement. TSA, either conventional or reverse, can restore function and relieve pain in cases where the tumour has contributed to significant joint destruction [4,5]. Griswold BG et al., demonstrated successful reverse TSA following excision of an infiltrating lipoma extending into the glenoid, with excellent clinical outcomes at a two-year follow-up [4]. Similarly, Vargas Lara R et al., reported TSA after excision of a teres minor lipoma in the setting of rotator cuff arthropathy, highlighting the feasibility of combining tumour excision with arthroplasty [5]. Hasan SS et al., described improved shoulder function after excision of a large intermuscular lipoma, emphasising the importance of preoperative imaging and careful surgical planning [6].

Although TSA in the context of shoulder fibrolipoma is uncommon, the limited cases reported in the literature suggest favourable outcomes. The use of structural bone graft substitutes and meticulous surgical techniques allows for the management of associated bone defects and the preservation of joint stability [4]. Given the rarity of this condition, further case reports and studies are essential to establish standardised treatment protocols and optimise patient outcomes. The patient displayed severe degenerative changes due to the fibrolipoma, necessitating TSA. Similar reports suggest that although lipomas are benign, they may cause bone erosion and joint degeneration. Literature indicates that TSA in younger patients is associated with concerns of early revision, but in carefully selected cases with joint destruction secondary to tumour pathology, it can offer durable pain relief and functional improvement [2,3]. As discussed by Sánchez FL et al., giant lipomas, although rare, should be considered in the differential diagnosis of large soft-tissue masses; imaging and histopathology are crucial for accurate diagnosis and management [7].

CONCLUSION(S)

Even histologically benign tumours like fibrolipomas can cause aggressive joint degeneration when located adjacent to articular structures. Early recognition, thorough preoperative planning, and timely surgical management are crucial in preventing irreversible joint damage. In selected young patients, TSA offers not only pain relief but also restoration of function and improvement in long-term quality of life.

REFERENCES

[1] Cofield RH. Total shoulder arthroplasty in the management of glenohumeral arthritis: Indications and surgical technique. J Bone Joint Surg Am. 1984;66(4):564-78. Doi:10.2106/00004623-198466040-00014.
[2] Singh JA, Sperling JW, Cofield RH. Risk factors for revision surgery after humeral head replacement: 1,431 shoulders over 3 decades. J Shoulder Elbow Surg. 2012;21(8):1039-44. Doi:10.1016/j.jse.2011.06.021.
[3] Hsu JE, Gee AO. The use of total shoulder arthroplasty in younger patients: A critical analysis review. JBJS Rev. 2015;3(2):e2. Doi:10.2106/JBJS.RVW.N.00032.

[4] Griswold BG, DeFoor MT, Steflik MJ, Parada SA. Reverse total shoulder arthroplasty in the setting of an intramuscular lipoma with extension into the glenoid: A case report. Hand (N Y). 2025;20(3):NP7-NP12. Doi:10.1177/15589447241267784.
[5] Vargas Lara R, Serrano R, Chaves C, Perez O. Lipoma of the teres minor in rotator cuff arthropathy: A case report. J Shoulder Elbow Arthroplast. 2023;7:24715492231180713. Doi:10.1177/24715492231180713.
[6] Hasan SS, O'Loughlin JP, Sorger JI. A large intermuscular shoulder lipoma causing pain and weakness in an 87-year-old patient: A case report. JSES Int. 2020;5(1):154-57. Doi:10.1016/j.jseint.2020.10.006.
[7] Sánchez FL, Arreola Peralta RJ, Sánchez Álvarez S, Boyso Suárez NY, Escamilla Cázares JG. Giant lipoma on the left shoulder: A case report. Cureus. 2024;16(6):e63067. Doi:10.7759/cureus.63067.

PARTICULARS OF CONTRIBUTORS:
1. Junior Resident, Department of Orthopaedics, Datta Meghe Institute of Higher Education and Research, Wardha, Maharashtra, India.
2. Professor, Department of Orthopaedics, Datta Meghe Institute of Higher Education and Research, Wardha, Maharashtra, India.
3. Junior Resident, Department of Orthopaedics, Datta Meghe Institute of Higher Education and Research, Wardha, Maharashtra, India.
4. Junior Resident, Department of Orthopaedics, Datta Meghe Institute of Higher Education and Research, Wardha, Maharashtra, India.
5. Junior Resident, Department of Orthopaedics, Datta Meghe Institute of Higher Education and Research, Wardha, Maharashtra, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Shashank Yadav,
Junior Resident, Department of Orthopaedics, Jawaharlal Nehru Medical College, Sawangi Meghe, Wardha-442107, Maharashtra, India.
E-mail: shashankyadav0029@gmail.com

PLAGIARISM CHECKING METHODS: [Jain H et al.]
- Plagiarism X-checker: Sep 13, 2025
- Manual Googling: Oct 13, 2025
- iThenticate Software: Oct 15, 2025 (4%)

ETYMOLOGY: Author Origin

EMENDATIONS: 6

AUTHOR DECLARATION:
- Financial or Other Competing Interests: None
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. Yes

Date of Submission: **Aug 24, 2025**
Date of Peer Review: **Sep 30, 2025**
Date of Acceptance: **Oct 17, 2025**
Date of Publishing: **Jan 01, 2026**