International Journal of Research in Orthopaedics
Meera TP et al. Int J Res Orthop. 2026 May;12(3):829-832
http://www.ijoro.org

DOI: https://dx.doi.org/10.18203/issn.2455-4510.IntJResOrthop20261241

Case Report

Gossypiboma mimicking myositis ossificans: a rare diagnostic masquerade

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Received: 16 March 2026
Revised: 16 April 2026
Accepted: 18 April 2026

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ABSTRACT

Gossypiboma refers to retained surgical material, most commonly a sponge or gauze, inadvertently left within the body after a surgical or medical procedure. Although rare, it represents an important preventable complication with potential medico legal implications. Its clinical and radiological manifestations can mimic various pathological conditions. We report the case of a 50-year-old male presenting with a swelling in the right calf associated with intermittent pain for two years. Ultrasonography revealed a heterogeneous lesion with calcifications in the deep intermuscular plane abutting the tibia, suggestive of Myositis Ossificans. Wide local excision was performed. Gross examination revealed a cystic lesion containing retained gauze material. Microscopic examination demonstrated a thick fibrous cyst wall with extensive foreign-body giant cell reaction, xanthogranulomatous inflammation, and entrapped cotton fibres, consistent with gossypiboma. This case highlights the diagnostic challenge posed by long-standing gossypiboma, which may clinically and radiologically mimic other soft tissue lesions. Histopathological examination plays a crucial role in establishing the definitive diagnosis.

Keywords: Gossypiboma, Foreign body giant cell reaction, Surgical sponge, Myositis ossificans

INTRODUCTION

Gossypiboma is a term derived from the Latin Gossypium (cotton) and the Swahili boma (place of concealment).[1,2] It refers to a mass formed around a cotton matrix unintentionally retained within a body cavity or tissue during surgery.[2] Gossypibomas are seldom reported due to medico-legal complications.[3,4] While most frequently reported in the abdominal and thoracic cavities, its occurrence in the extremities is rare and poses a significant diagnostic challenge.[4,5] Due to its varied clinical presentations and radiological features, it is frequently labelled "the great mimicker," often being misdiagnosed as an abscess, hematoma, or soft tissue neoplasm.[5,6] A particularly deceptive presentation occurs when an intramuscular gossypiboma undergoes peripheral mineralization, closely mimicking myositis ossificans (MO).[5] Myositis ossificans is characterized by heterotopic ossification within skeletal muscle, typically following trauma.[7] Both conditions can present as a firm, palpable mass with a "zonal" pattern of peripheral calcification on imaging, often leading clinicians down an incorrect diagnostic pathway.[5-8] The definitive differentiation between these two entities lies in their histopathological architecture.[5]

This case report describes a rare presentation of a long-standing leg gossypiboma that clinically and radiologically mimicked myositis ossificans. We highlight the critical role of histopathological examination—particularly the identification of synthetic fibres and granulomatous inflammation—in establishing the correct diagnosis and

elucidating the underlying pathophysiology of this diagnostic masquerade.

CASE REPORT

A 50-year-old male presented to the outpatient department with complaints of a swelling in the right calf region associated with intermittent pain for the past two years. The pain was described as dull aching and occurred on and off, without any associated systemic symptoms.

Figure 1: (A) clinical photograph showing swelling in the right calf region with a healed hypopigmented scar overlying the lesion and (B) another view of the right lower limb demonstrating the extent and location of the calf swelling.

On general physical examination, the patient's vital parameters were within normal limits. Local examination revealed a diffuse swelling measuring approximately 4×3 cm in the right calf region. The overlying skin showed a hypopigmented scar. On palpation, the swelling was firm to hard in consistency and non-tender.

Figure 2: Plain radiograph (anteroposterior view) of the right leg demonstrating a localised soft tissue swelling in the mid-calf region adjacent to tibial shaft without significant bony involvement raising suspicion of myositis ossificans.

Plain Xray showed a localised soft tissue swelling in the mid-calf region adjacent to tibial shaft without significant bony involvement raising suspicion of myositis ossificans.

Ultrasonography of the right leg demonstrated a small abscess focus along with a heterogeneous lesion measuring 4.5×1.8 cm containing multiple calcifications, located in the deep intermuscular plane. The lesion was noted to be closely abutting the mid-shaft of the tibia, and the radiological impression was suggestive of Myositis Ossificans.

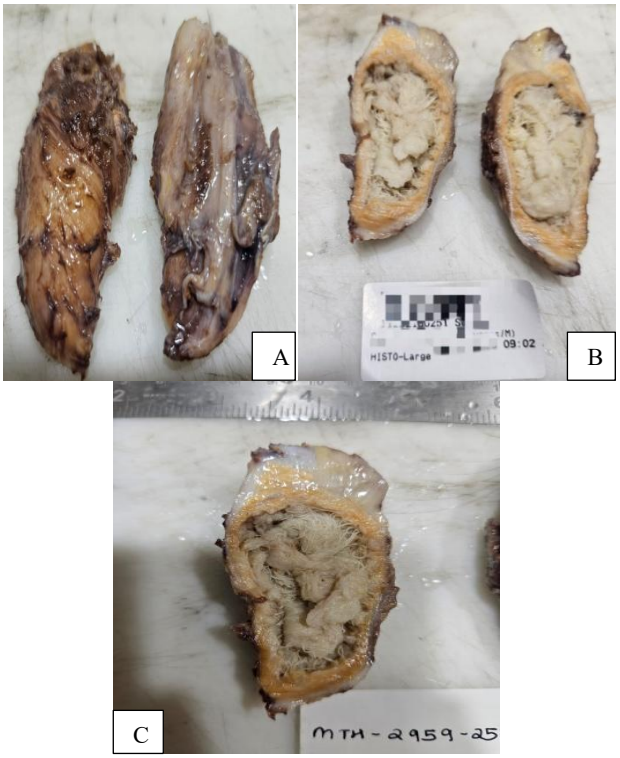

Figure 3: Gross appearance of gossypiboma (retained surgical sponge): (A) external surfaces of the excised mass showing irregular fibrous capsule with areas of congestion and chronic inflammatory changes, consistent with a foreign-body reaction and (B and C): bisected specimen showing a thick fibrous capsule enclosing a cavity filled with retained surgical gauze.

Based on the clinical and radiological findings, a provisional diagnosis of myositis ossificans was made. The patient subsequently underwent wide local excision of the lesion, and the specimen was submitted for histopathological examination in 10% buffered formalin.

Gross examination revealed a well-circumscribed nodular mass measuring 7.5×3×2 cm with an irregular external surface. On cut section, a cystic structure containing grey-white gauze material was identified within the lesion. The gauze material was firmly adherent to the cyst wall and could not be separated from it. The maximum thickness of the cyst wall measured 0.8 cm. Microscopic examination of multiple representative sections revealed a thick fibrous cyst wall showing extensive foreign-body giant cell reaction and xanthogranulomatous inflammation surrounding entrapped cotton fibres. Patchy moderate chronic inflammatory infiltrate was also present. No

epithelioid granulomas or evidence of malignancy was identified. The findings were discussed with the treating clinician, and we further enquired about the patient's past medical history. On detailed history taking, the clinician revealed a previous burn injury in the same region, for which he had undergone regular dressing initially but was later non-compliant with follow-up care.

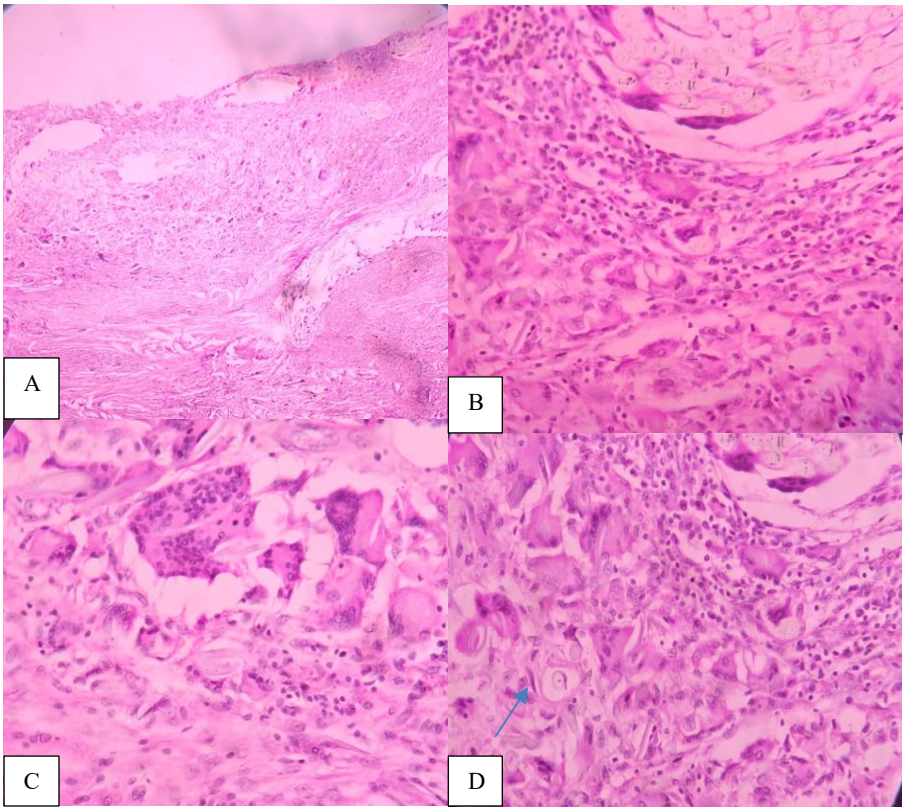

Figure 4: Microscopic appearance of gossypiboma: (A): low-power photomicrograph showing fibro collagenous tissue with granulomatous inflammation surrounding retained foreign material. (H and E stain, x 40), (B): intermediate-power view showing foreign body–type multinucleated giant cells surrounding elongated refractile cotton fibres. (H and E stain, x100) and (C): high power view showing cotton fibres surrounded by histiocytes and multinucleated giant cells forming a foreign body granuloma (H and E stain, x 400); (D): high power view showing refractile cotton fibres engulfed by the foreign body giant cells. (H and E stain,x 400).

Based on the gross and microscopic findings, a final diagnosis of Gossypiboma with foreign-body giant cell reaction and xanthogranulomatous inflammation was made. The diagnosis explained the long-standing inflammatory mass that had clinically and radiologically mimicked Myositis Ossificans.

DISCUSSION

Gossypiboma represents an important medicolegal issue owing to its potential legal implications and the associated risk of morbidity and mortality.[9] The term refers to a retained surgical sponge or textile material inadvertently left within the body after a surgical or medical procedure. The clinical presentation of gossypiboma may be pseudotumoral, occlusive, or septic, depending on the location of the retained material and the nature of the host tissue response.[10] Although no part of the body is exempt, the abdominal cavity, followed by the pelvic and thoracic cavities, are the most commonly involved sites.[11] In the present case, the patient had a previous history of burn injury at the site of the lesion, followed by wound infection approximately five years earlier, which required incision and drainage. The patient had been advised to undergo alternate-day surgical dressing at a medical centre but subsequently discontinued follow-up visits. The retained gauze gradually resulted in the formation of a gossypiboma over a period of several years. The clinical manifestations of gossypiboma can be highly variable. Palpable mass, pain, and fever are among the most frequently reported symptoms.[10] In the absence of a relevant clinical history, the lesion may raise suspicion for neoplastic pathology or other inflammatory conditions. In our case, the history of burn injury followed by incision and drainage provided an important diagnostic clue that helped correlate the pathological findings. The pathogenesis of gossypiboma involves two major types of tissue reactions to the retained surgical sponge: an exudative inflammatory reaction, characterized by early infection, abscess formation, or fistula formation, and an aseptic fibrotic reaction, which results in encapsulation of the foreign material and

granuloma formation.[11] On microscopic examination, the characteristic findings include foreign-body giant cell reaction, chronic inflammatory infiltrate, fibrinous exudates, and fragmented cellulose fibres within the lesion. In cases showing an aseptic reaction, well-formed granulomas composed of epithelioid cells and multinucleated giant cells may also be observed.[12]

Radiological findings of gossypiboma are often variable and may mimic other pathological conditions. On plain radiography, a radiopaque marker attached to the surgical sponge may serve as an important diagnostic clue. However, the marker may not always be visible, particularly if it lies beneath radiopaque structures such as bone.[13] In the present case, simple gauze material without a radiopaque marker had been used; therefore, radiographic imaging did not provide any diagnostic clue. On ultrasonography, gossypiboma may appear as a well-defined mass with internal echogenic areas surrounded by a hypoechoic rim and exhibiting strong posterior acoustic shadowing.[14] In our case, the presence of multiple calcific foci and the lesion's location in the intermuscular plane close to the tibia resulted in a radiological impression suggestive of Myositis Ossificans, thereby creating a diagnostic dilemma. Although careful history taking, thorough clinical examination, and appropriate radiological investigations may aid in diagnosis, they may not always be conclusive. In the present case, the diagnosis of gossypiboma was ultimately established only after histopathological examination of the excised specimen. This case highlights the importance of considering retained foreign material in the differential diagnosis of chronic soft tissue masses, particularly in patients with a history of prior trauma, surgical procedures, or repeated wound dressings.

CONCLUSION

Gossypiboma is a rare but important complication of retained surgical material that may present years later and mimic other soft tissue lesions such as Myositis Ossificans. Careful clinical history, radiological evaluation, and histopathological examination are essential for accurate diagnosis and appropriate management

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Kanat BH, Kutluer N, Bozan MB, Aksoy N, Öztürk T. A forgotten status: Gossypiboma. ABCD Arq Bras Cir Dig. 2021;34(4):e1571.
2. Kohli S, Singhal A, Tiwari B, Singhal S. Gossypiboma, varied presentations: A report of two cases. J Clin Imaging Sci. 2013;3:11.
3. Wan W, Le T, Riskin L, Macario A. Improving safety in the operating room: a systematic review of retained surgical sponges. Curr Opin Anaesthesiol. 2009;22(2):207-14.
4. Akpinar A, Ucler N, Ozdemir CO. Textiloma (gossypiboma) mimicking recurrent intracranial abscess. BMC Res Notes. 2015;8:377.
5. Puvanesarajah V, Fayad LM, Rao SS, McCarthy EF, Morris CD. Extremity gossypiboma mimicking sarcoma: case report and review. Skeletal Radiol. 2019;48(4):629-35.
6. Haidari M, Malakzai HA, Haidary AM, Saadaat R, Hakimi A, Abdul-Ghafar J. Gossypiboma of thigh mimicking soft tissue sarcoma: A case report and review of the literature. Int J Surg Case Rep. 2023;106:108106.
7. Walczak BE, Johnson CN, Howe BM. Myositis Ossificans. J Am Acad Orthop Surg. 2015;23(10):612-22.
8. O'Dwyer HM, Al-Nakshabandi NA, Al-Muzahmi K, Ryan A, O'Connell JX, Munk PL. Calcific myonecrosis: keys to recognition and management. AJR Am J Roentgenol. 2006;187(2):W67-76.
9. Rajagopal A, Martin J. Gossypiboma—"A surgeon's legacy": report of a case and review of the literature. Dis Colon Rectum. 2002;45(1):119-20.
10. Wan W, Le T, Riskin L, Macario A. Improving safety in the operating room: a systematic literature review of retained surgical sponges. Curr Opin Anaesthesiol. 2009;22(2):207-14.
11. Kaiser CW, Friedman S, Spurling KP, Slowick T, Kaiser HA. The retained surgical sponge. Ann Surg. 1996;224(1):79-84.
12. Lata I, Kapoor D, Sahu S. Gossypiboma: a diagnostic dilemma. J Clin Diagn Res. 2011;5(9):1263-5.
13. Parra JA, Oppliger F, Berríos R, Schiappacasse G. Gossypiboma: radiological findings and differential diagnosis. AJR Am J Roentgenol. 1999;173(2):575-8.
14. O'Connor AR, Coakley FV, Meng MV, Eberhardt SC. Imaging of retained surgical sponges. AJR Am J Roentgenol. 2003;180(2):481-7.

Cite this article as: Meera TP, Raut S. Gossypiboma mimicking myositis ossificans: a rare diagnostic masquerade. Int J Res Orthop 2026;12:829-32.