Case Report

Asymptomatic retained gauge piece (gossypiboma) for 10 years after posterior spinal surgery - A case report

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ABSTRACT

A young old male presented with a 2 months history of recurrent disc prolapse 10 years after prior surgery. He was operated for L4-L5 disc prolapse 10 years ago. Fresh MRI showed prolapsed intervertebral disk (PIVD) at L5-S1 level with a spherical mass lesion of 2.5x2x2 cm with well defined margin in the left paraspinal area adjacent to L5 lamina. The patient had symptoms of L5-S1 PIVD but absolutely no local or systemic symptom for the mass. On exploration, a retained gauge piece was found in the left paraspinal area.

Keywords: Gossypiboma, L5-S1, Prolapsed intervertebral disc

'Gossypiboma' is the term which is derived from Latin 'Gossypium' (Genus for cotton) and Kiswahili 'boma' (place of concealment), used to describe a retained mass within the body [1]. Other synonyms for gossypiboma are textiloma, muslinoma and gauzeoma. This article reports a case of retained gauge piece for 10years after lumbar discectomy.

CASE REPORT

A 34 year old male patient presented with the chief complaint of radiating pain along the left lower limb for last 2 months. He had minimal back pain. He was operated 10years ago for L4-L5 disc prolapse at another medical center and after the surgery he became well and symptom free till this latest affliction. On admission, the patient was in good health and afebrile. Examination showed left positive SLR at 40 degree. Other neurological findings were within normal limits. X-ray L-S spine and routine Laboratory analysis was normal.

MRI of the lumbar spine showed prolapsed L5-S1disc and surprisingly a mass lesion, 2.5x2x2 cm in diameter, in the left posterior paravertebral region at L5 –S1 region and immediately adjacent to the L5 lamina. Morphologic pattern the shape was spherical and the margin was well defined. Both T1 and T2 weighted imaging of the peripheral wall showed a thin rim of increased signal intensity. MR findings of center of the mass on T1 and T2 weighted imaging was heterogeneously low to medium.

Exploration of the mass and microdiscectomy L5-S1 were planned. At surgery, (left sided unilateral exposure) retained gauge piece was found within the left paraspinal region and removed. The L5-S1prolapsed disc materials were removed and necrotic soft tissues were debrided. The wound was irrigated with saline solution and the wound was closed in layers. The patient was mobilised and discharged the next day. Prophylactic oral antibiotic therapy continued until the postoperative 7th day.

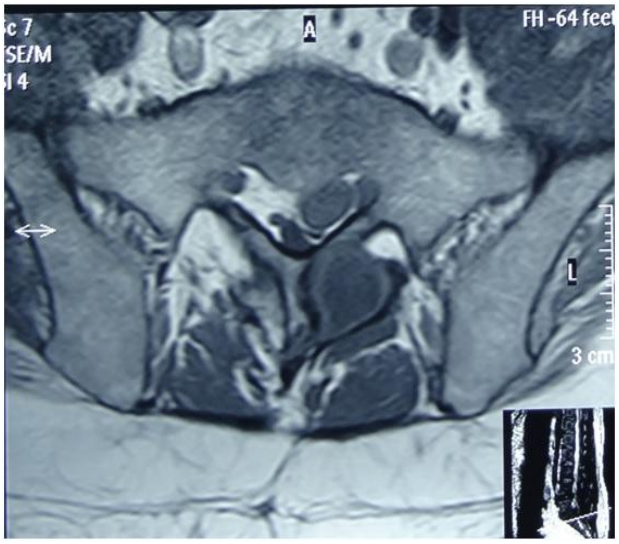

Figure 1 – MRI of the lumbar spine showing a mass lesion, 2.5x2x2 cm, in left posterior paravertebral region at L5-S1 region and immediately adjacent to L5 lamina

DISCUSSION

Gossypiboma is an uncommon complication (1 per 1500 surgery) and rarely reported [1]. There are also medico legal issues associated with gossypiboma. Retained gauge piece after surgery usually initiates two types of reaction- either aseptic fibrous response resulting in adhesion, encapsulation and granuloma or an exudative reaction leading to cyst or abscess formation [2]. In the first group, patients may remain asymptomatic for many years. In most cases, this form shows no clinically significant symptom [3]. There is report of retained gauge piece for 40 years after posterior spinal surgery [4]. The chemical composition of cotton fibre is as given in Table 1 [3]. It is the impurities and protein material that can give rise to allergic reaction to cotton.

In some cases, Gossypiboma is diagnosed incidentally like ours. Gauge piece with radio-opaque mark can be visualised in plain x-ray but non radio-opaque marked gauge piece will not be seen in X-ray. MRI can detect it but a high index of suspicion is needed. In most institutions, surgical sponges contain radiopaque material that facilitates detection by standard radiography. Such sponges can also be identified readily in CT images. However, surgical sponges without radiopaque markers are still used in many institutions, and this type of sponge is very difficult to identify by using standard radiographic and CT imaging [6].

Figure 2 – MRI of lumbar spine showing prolapsed L5-S1disc and a mass lesion in left posterior paravertebral region at L5 –S1 region

On CT scan, gossypibomas appear as circumscribed masses with thick walls; these masses might contain gas bubbles and may exhibit calcification or enhancement of the wall after administration of contrast medium. The internal structure may appear to be whorl-like or spongiform because of the presence of gas trapped within the mesh of the sponge [6]. MR images can be difficult to interpret because radiopaque filaments cannot be visualized: The radiopaque filament is impregnated with barium sulfate, which is neither magnetic nor paramagnetic and therefore causes no artefacts on MR images. Furthermore, the filament contains very few free protons and, therefore, does not provide a strong MR signal intensity [6 -7].

Microscopic examination of a gossypiboma reveals that the lesions contain nonspecific suppurative inflammatory cells and foamy histiocytes surrounded by granulation tissue and fibrosis [6]. After a retained gauge piece has been found a thorough wash with saline should be done. The fibrotic wall should be debrided. If the wound is infected culture samples should be obtained. If the mass is well identified as a gauge piece no further histopathological examination of the mass is required. One should search for other retained fragment. The patient may be counselled regarding the retained gauze piece.

The problem is thought to be avoidable when strict manual counting guidelines are followed by Operating Room (OR) personnel.–Exact count of sponges before wound closure is a must. Use of radio opaque gauge or radio frequency identification technology is useful to avoid such incidence and can inform the operating team regarding any retained gauge piece.

Table 1 - Composition of Typical Cotton Fibers

Constituent	Typical %	Range %
Cellulose	95.0	88.0 96.0
Protein (% N x 6.25)*	1.3	1.1-1.9
Pectic substances	0.9	0.7-1.2
Ash	1.2	0.7-1.6
Wax	0.6	0.4-1.0
Total sugars	0.3	0.I-1.0
Organic acids	0.8	0.5-1.0
Pigment	Trace	-
Others	1.4	-

*Standard method of estimating percent protein from nitrogen content (% N).

CONCLUSION

Awareness and high index of suspicion of this problem among surgeons and radiologists is essential to avoid a delay in the diagnosis and morbidities. Gossypiboma, which is a both medical and legal issue, should be considered in the differential diagnosis of a space occupying lesion or abscess near the posterior elements in radiological imaging in a case of operated posterior spine surgery.

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