Textiloma: Uncommon Cause of Failed Back Syndrome after Lumbar Spine Surgery

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Abstract

Textiloma is the term used to describe retained foreign objects in the body which are left intentionally or accidentally during the operation. Textiloma is rare in neurosurgery. They are more frequent in thoracic and abdominal surgeries. Depending on their location, they can present with complications and symptoms or they may remain asymptomatic for many years. Textiloma and their complications are rarely reported due to medico-legal implications. In this article, we are presenting a case of spinal asymptomatic textiloma in a patient, who was operated 16 years ago, for a lumbar discectomy. On reviewing the literature, we found less than 60 cases reported until 2015.

Keywords: Complication, Foreign body, Gauze piece, Lumbar disc surgery

INTRODUCTION

Textiloma is the term used to describe a mass of cotton matrix surrounded by a foreign body reaction which is left behind in a body cavity during an operation.¹ Textiloma also called as Gossypiboma and muslinoma.²

Although these masses and their associated complications may occur after the surgical procedure, but they are rarely reported due to medico-legal implications.³ One study has reported the rate of textiloma as 0.7% in 10,000 lumbar disc operations.³ Some textilomas cause infection or abscess formation in the early stage, whereas others remain clinically asymptomatic for many years. In rare instances, textilomas can clinically and/or radiologically mimic spinal tumors. Most cases of textiloma in the literature have been reported in abdominal or thoracic surgery but very few have been linked to spinal surgery. Until 2015 <60 cases of spinal or paraspinal textiloma have been documented in the literature.

Here, we describe a case in which gauze piece, a foreign body, was left behind during an operation for lumbar disc herniation. The patient presented 16 years later with persistent backache and weakness in both lower limbs.

Therefore, it is important to be aware of patients who present with a paraspinal soft-tissue mass and unusual or atypical symptoms. Imaging is helpful for arriving at the correct diagnosis.

CASE REPORT

A 62-year-old male presented with a complaint of a sudden increase in of severity of low back pain and weakness in both lower limbs for 15 days. 16 years back laminectomy and discectomy was performed for a similar problem, 2 months after the surgery patient developed bilateral foot drop and the patient had a persistent mild low backache. As the patient was able to carry out his day-to-day activities, he ignored the illness. This time, severe low backache accompanied with radiating pain in both lower limbs. The patient also complaining sudden weakness in both lower limbs.

A physical examination indicated good health status. There was no tenderness, swelling, or erythema at the incision site. The straight leg-raising test was positive at...
70° on the both sides. The patient had 4/5 motor power in both hip and knee joint with bilateral foot drop.

He had decreased sensation in both lower limbs below L3 level. Perianal sensations also decreased. He had diminished patellar deep tendon reflex on both sides with bilateral absent ankle reflex. He had atonic bladder with a lax anal sphincter.

Routine laboratory testing within normal range.

Magnetic resonance imaging (MRI) of the lumbo-sacral spine showed the laminectomy defect at L4, L5, and S1 level and prolapsed intervertebral disc at L2-L3, L3-L4, and L5-S1 region with hypertrophied ligamentum flavum with marked compression over thecal sac and bilateral transeversing roots. Mylogram showed complete cut off of thecal sac at L2-L3 and L3-L4 levels. However, there was no reporting of abnormal mass at paraspinal region (Figures 1 and 2).

For this, the patient was subjected to surgery. During the surgery, a foreign body composed of cotton (gauze piece) was found in the left paraspinal region at L2 level which was completely removed (Figures 3 and 4).

Marked thecal compression was noted from L2 to L4 level so L2, L3, L4 laminectomy and L2-L3, L3-L4 discectomy was performed.

No infection or abscess was detected. This foreign body was sent for histopathological examination which revealed only chronic inflammatory infiltration and granuloma formation.

1 month after the operation, there were no abnormal findings on MRI of the lumbosacral spine.

**DISCUSSION**

Cotton pads, gauze piece, and sponges are used to achieve hemostasis in any surgery. Even after taking precautions...
mistakes do happen and leaving such materials leads to various clinical and radiological manifestations.\textsuperscript{4,5}

In the early period after surgery, these forgotten materials can lead to infections and abscess formation. However, some remain clinically asymptomatic for many years, and then cause a foreign body reaction in the surrounding tissue, which leads to various clinical and radiological manifestations.\textsuperscript{5-7}

It is difficult to estimate the incidence of textilomas as these cases are not reported due to legal lawsuits. The rate of textilomas has been reported as 0.7\% in 10,000 lumbar disc operations.\textsuperscript{8} Less than 60 cases were reported in the period from 1965 to 2015, and most of these reports came from surgeons and radiologists who were not responsible for this condition (Table 1).

Textilomas may remain asymptomatic for many years. Stoll reported a case of retained surgical sponge for 40 years after laminectomy.\textsuperscript{9} This is the spinal textiloma with the longest interval between surgery and clinical symptom manifestation has been reported until now. Our case became symptomatic 16 years after the initial surgery due to prolapsed intervertebral disc.

Textilomas may remain asymptomatic for many years thus they are difficult to diagnose. Many patients come to the medical center only when they have symptoms or medico-legal problems arise when a space-occupying lesion is detected neuro-radiologically.

Textile products such as gauze, bandages, and cotton pads are widely used during surgical procedures for hemostasis, retraction, and dissection. During emergency surgical interventions, in surgeries of obese patients, the textile products used may be overlooked, especially within a severely hemorrhagic surgical site.

Foreign bodies that are left in the body intentionally or accidentally can be presented with two major clinical patterns, i.e., infection or a textiloma. While infection is more common and occurs in early post-operative period, textilomas are rare and occur in late post-operative period.\textsuperscript{10}

The mechanism for infection at the surgical site is based on the fact that the retained sponge acts as an incubation plate and leads to a super infection, which in turn results in fistulisation.\textsuperscript{11,12}

In the second pattern, which also called as aseptic fibrinous form, foreign bodies remain clinically inactive or cause tissue inflammation and reaction without abscess formation. Foreign bodies and peripheral inflammation may grow significantly and leads to new clinical symptomatology.\textsuperscript{11,12} The aseptic fibrinous tissue reaction of textilomas is accompanied by adhesions and encapsulation, whereas the exudative tissue reaction

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is related to abscess formation and possible secondary bacterial infection. Both of these reaction types can be diagnosed via MRI.13,14

Different MRI signal patterns can be observed depending on the amount of fluid and protein compounds retained in the textile product.14 Granulomas appear hypointense on T1-weighted and hyperintense on T2-weighted MRI images. If the lesion has capsule formation, it appears hypointense on both T1- and T2-weighted images. Textilomas may show an enhanced hyperintense rim around the hypointense center after contrast medium administration.

Treatment for the clinical symptoms associated with textilomas involves surgical removal of the mass. Whether a textiloma should be treated surgically or not is controversial. The complicated part of the issue is the medico-legal aspect. In our case, the patient was symptomatic due to prolapse intervertebral disc and textiloma was not reported in MRI, which was found incidentally during surgery.

**CONCLUSION**

Awareness of this complication among neurosurgeons and radiologists is essential to avoid unnecessary delay in diagnosis and morbidity. Civil lawsuits brought against surgeons for medical negligence is becoming more frequent, and this is prompting surgical teams to be even more careful. It is possible to overlook cotton and gauze pads in the surgical field.

The following precautions should be taken to avoid textiloma:

1. Counting of the textile product should be done at the end of the surgery
2. Threaded cotton or gauze pads should be used during surgery so that they can be easily located and removed
3. Use the product which has radiopaque marker so that they can be visualized under fluoroscopy
4. Once hemostasis is achieved, the operative site should be flushed with saline and carefully examined for foreign materials
5. Before closing the incision, all textile products should be kept away from the surgical site.

The differential diagnosis of a textiloma should be considered when patient presented with surgical wound infections with non-specific back pain and/or fever and neurological symptoms, and for patients with a history of spine surgery and suspected spinal tumors. The results of laboratory tests (i.e., sedimentation, C-reactive protein, and total blood count) may vary depending on the exudative or aseptic progression of the textiloma. Magnetic resonance imaging is the gold standard for diagnosis of textilomas.

**REFERENCES**


