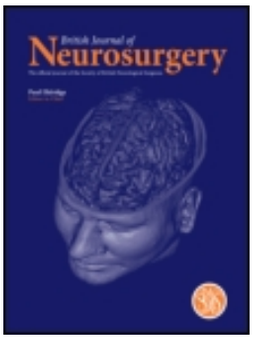

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SHORT REPORT

Recurrence of meralgia paresthetica years after a neurexeresis procedure: A case report

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Abstract

Recurrence of meralgia paresthetica after a pain-free interval following a neurexeresis or neurectomy procedure has not been reported before. We present a case of recurrence 5 years after neurexeresis of the lateral femoral cutaneous nerve. Resection of the proximal stump through a suprainguinal approach in this case again led to complete and long-lasting pain relief.

Keywords: idiopathic; meralgia paresthetica; neurectomy; neurexeresis; neurolysis; neuroma; supra-inguinal approach;

Clinical details

In October 2012, a 65-year-old patient was referred to us from an outpatient clinic, where he had been operated for symptoms of meralgia paresthetica on both sides: neurexeresis on the right side in January 2006 and the same procedure on the left side in December 2009. Both procedures had resulted in immediate pain relief, but in January 2011, 5 years after the surgery on the right side, he again developed symptoms of a burning sensation on the lateral side of his right thigh. The symptoms mainly occurred while walking, which heavily impaired the patient who, as a pilgrim, was used to walk long distances (e.g., to Santiago de Compostela, about 2,000 km from the Netherlands).

Re-explorative surgery was performed in October 2012. A small incision of about 5 cm was made 1 cm above the anterior superior iliac spine (ASIS) parallel to the inguinal ligament (according to the procedure described by Alberti et al.[1]). The aponeurosis of the external oblique abdominal muscle was opened and the muscle fibers were retracted (Fig. 1). Subsequently, part of the lateral attachment of the internal oblique and transversus abdominis muscles were detached from the ASIS and reflected to open the retroperitoneal space. A loose blind-ending nerve was identified on top of the iliac muscle. The nerve end was transected as far proximally as possible and sent for pathologic analysis. Hematoxylin and eosin (H&E) stain showed thickening of the perineurium (Fig. 2A). Neurofilament staining showed clusters of small regenerating nerve fibers, some of them appeared on the outside of the epineurium (Fig. 2B).

After the surgery, the patient had no more symptoms of meralgia paresthetica and he was again able to walk long distances. At the last follow-up, 2 years after re-exploration, he was still free of pain.

Discussion

Iatrogenic meralgia paresthetica has been reported following different surgical procedures (e.g., anterior iliac crest bone graft harvesting[2] and hip arthroplasty[3]). To the best of our knowledge, there is no previous case description of recurrence of meralgia paresthetica years after a neurexeresis or neurectomy procedure.

Several explanations might be proposed for the recurrence in our case. First of all, denervation might lead to deafferentiation pain, like in the case reported by Nurmikko et al.[4] This phenomenon is similar to phantom pain that is sometimes observed after limb amputation.[5] In the past, we have had some patients, who experienced initial worsening of the symptoms in the first few weeks after transection. However, we have not had a patient in whom these symptoms have persisted. In the present case, in which symptoms recurred years after the transection, this explanation also seems less likely, because phantom limb pain usually does not occur following a pain-free interval.[5]

Another explanation for the recurrence of symptoms might be the formation of a neuroma. Although a typical neuroma was not observed in our case, histologic analysis did show thickening of the perineurium (Fig. 2A), which is frequently observed in patients with chronic meralgia paresthetica.[6] Possibly the distal neuroma in our case was damaged during surgery, while handling the proximal stump and histology was performed on a more proximal part of the nerve specimen. The chance for developing a painful neuroma after a neurectomy procedure is low, considering, for example, the low frequency in which this complication is observed after harvesting of the sural nerve.[7] Moreover, painful neuromas

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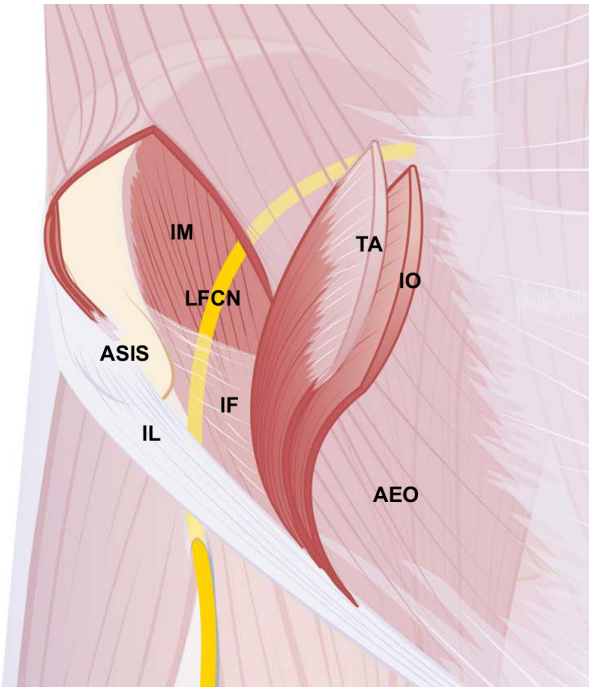

Fig. 1. Normal course of the lateral femoral cutaneous nerve (LFCN) exposed through the suprainguinal approach. The aponeurosis of the external oblique muscle (AEO) is opened and the muscle fibers are retracted. Parts of the lateral attachment of the internal oblique (IO) and transverse abdominis (TA) muscles are released from the anterior superior iliac spine (ASIS). The nerve runs medial to the ASIS, on top of the iliac muscle (IM), under or over the iliac fascia (IF), through the inguinal ligament (IL).

are more frequently observed after transection of nerves than run directly under the skin, as, for example, in digital nerves after finger amputation.[8] In our case, the proximal stump was located in the pelvis on top of the iliac muscle. The reason that this neuroma might have become painful in time could be that the proximal nerve stump had become attached to the iliac fascia. This would explain why symptoms in our patient mainly occurred while he was walking, which might have caused traction to the nerve end.

Until recently, the chance for developing a painful neuroma after transection of the lateral femoral cutaneous nerve was the reason why we generally performed a neurexeresis procedure. The theory that this procedure might reduce the chance for developing a neuroma is that the nerve fascicles break at different levels (which could also explain the presence of clusters of regenerating axons on the outside of the epineurium in our case, see Fig. 2B). However, there is no solid evidence that this breakage of the nerve at different levels reduces the chance for developing a painful neuroma. Currently, we are therefore generally performing the neurectomy instead of the neurexeresis procedure.

The alternative for neurexersis or neurectomy is the neurolysis procedure. This procedure has the advantage that sensation in the anterolateral thigh is preserved. The reported success rates for the neurolysis procedure however are generally lower.[9] On the other hand, the neurexersis and neurectomy procedures thus have a small change for developing deafferentiation pain or a painful neuroma, and obviously have the disadvantage of permanent numbness in the anterolateral thigh (although in a recent study we found that most patients were not bothered by this numbness[10]). When deciding on the surgical treatment for meralgia paresthetica these different advantages and disadvantages should be discussed with the patient. We are currently performing a double blind randomized controlled trial to compare the effectiveness of both procedures.[6]

In addition to the fact that this case is rare, it also shows that re-operation in case of recurrence might lead to complete relief of pain. Of course it is possible that symptoms will again recur due to neuroma formation, but until now, 2 years after the re-operation, our patient is still free of pain. One of the reasons why symptoms might not have recurred could be that the nerve is transected at a more proximal level than during the first surgery (that was performed through the infra-inguinal approach). Possibly this more proximal transection prevents the adhesion of the proximal stump to the iliac fascia or inguinal ligament. More research is needed to investigate the intrapelvic anatomy of the lateral femoral cutaneous nerve in relation to the iliac muscle/fascia.

For re-exploration we used a supra-inguinal approach, which was recently described by Alberti et al.[1] (Fig. 2). These authors advocated this approach for primary neurolysis or neurectomy of the LFCN, because the nerve might not only be compressed at the inguinal ligament, but also at a more proximal level under the iliac fascia. As our case shows, this suprainguinal approach can also be used in recurrent cases of meralgia paresthetica after neurexersis or neurectomy. Identification of the proximal nerve stump through this approach can be difficult. Therefore, the anatomic landmarks illustrated in Fig. 1 should be considered.

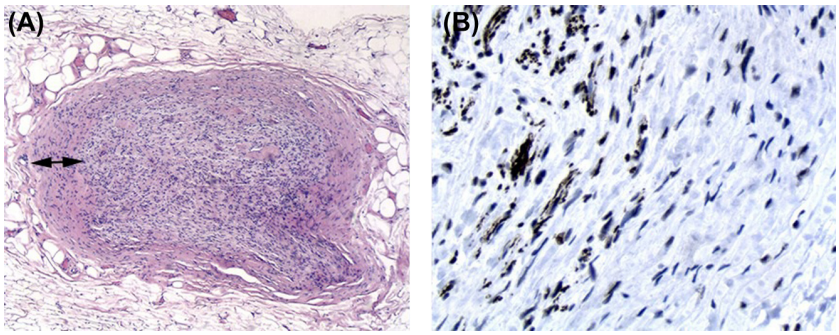

Fig. 2. Microscopic images of transverse sections taken through the proximal stump of the lateral femoral cutaneous nerve resected during re-exploration surgery in this case. (A) H&E stain, 4 × magnification, demonstrating thickening of the perineurium (pointed out by arrowheads). (B) 20 × magnification, neurofilament staining, showing clusters of small regenerating nerve fibers, some of them on the outside of the epineurium.

Conclusion

In this article, the authors presented a rare case of recurrence of symptoms of meralgia paresthetica years after a neurexeresis procedure. Surgical re-exploration through a supra-inguinal approach with re-resection of the proximal nerve end again led to complete pain relief.

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Declaration of interest: The authors report no declarations of interest. The authors alone are responsible for the content and writing of the paper.

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