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Research Article

MERALGIA PARESTHETICA INDUCED BY CIRCUMFLEX ILIAC ARTERY

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ABSTRACT

Meralgia paresthetica(MP) is a result of entrapment of the lateral femoral cutaneous nerve (LFCN) which causes tingling or burning sensation in the lateral part of the proximal thigh. MP may be caused by compression of the anterior superior iliac spine(ASIS) area externally, by natural or traumatic thickening of inguinal ligament, by weight gain, or rarely by compression on the fascia lata. The author experienced a case of LFCN compression caused by circumflex iliac artery under inguinal ligament in a 24-year-old woman. On a plain radiography, ASIS abnormality or vertebral abnormality was not found, but MRI showed that the enhancement of vessel was in the LFCN pathway in the left ASIS medial part. Conservative treatment for 3 weeks showed no symptom improvement and surgical treatment was decided. The LFCN was released by bisecting the inguinal ligament longitudinally. It was found that circumflex iliac artery was engorged under the inguinal ligament and cauterization of this blood vessel was performed. Tingling pain in the lateral part of the thigh was lost immediately after surgery, and sensory deterioration improved at 2 months postoperatively.

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INTRODUCTION

Meralgia paresthetica (MP) is a mononeuropathy of the lateral femoral cutaneous nerve (LFCN) which is characterized by sensory change like tingling or burning sensation, itching and paresthesia in the lateral part of the proximal thigh^(1,2). MP is a result of entrapment of the LFCN. It may be caused by compression of the anterior superior iliac spine (ASIS) area externally, by natural or traumatic thickening of inguinal ligament, by weight gain, or rarely by compression on the fascia lata. MP has an incidence of 4-10/10,000 people and usually occurs in those aged 30-40 years⁽³⁻⁵⁾. Entrapment of the LFCN at the inguinal ligament level is common. Surgical intervention such as neurolysis is indicated only if intractable pain persists because approximately 60-90% of MP improves with conservative treatment^(6,7). We report here a rare case of refractory MP caused by entrapment of the LFCN by the circumflex iliac artery under the inguinal ligament, and successful treatment with cauterization of the circumflex iliac artery and neurolysis.

Case

A 24-year-old female patient visited our hospital with severe sensory disturbance and tingling pain of the left lateral thigh for 6 months. She complained that she was awake because of the thigh pain. There was no trauma history for her. No particular

findings were detected on the blood tests. On a plain radiography, ASIS abnormality or vertebral abnormality was not found (fig 1), but on the T2 weighted gadolinium enhanced image of MRI showed that the enhancement of vessel was noted in the LFCN pathway in the left ASIS medial part(fig 2).



Fig 1 There is no abnormal finding on a plain radiograph.

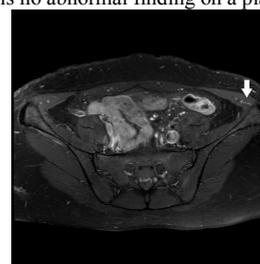


Fig 2 On the T2 weighted gadolinium enhanced image of MRI showed that the enhancement of vessel was noted in the LFCN pathway in the left ASIS medial part

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Conservative treatment with nonsteroidal anti-inflammatory drugs for 3 weeks showed no symptom improvement and surgical treatment was decided. Surgery was performed in the supine position and the skin incision was made about 5 cm along the lateral margin of the sartorius muscle at the medial border of ASIS. After the LFCN was found between the sartorius muscle and the tensor fascia lata, dissection was performed while ascending to the inguinal ligament. The LFCN was released by bisecting the inguinal ligament longitudinally. It was found that circumflex iliac artery compressed the LFCN under the inguinal ligament (fig 3) and cauterization of this blood vessel was performed. Tingling pain in the lateral part of the thigh was lost immediately after surgery, and sensory deterioration improved at 2 months postoperatively.

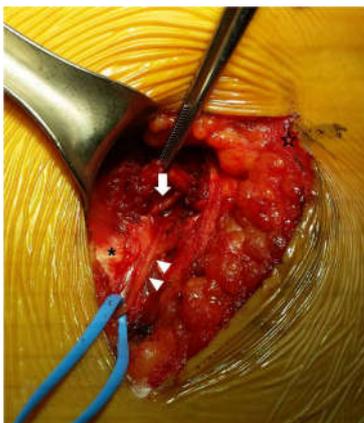


Fig 3. Circumflex iliac artery (arrow) compressed the LFCN (arrow heads) under the inguinal ligament. (*:inguinal ligament, ☆: ASIS)

DISCUSSION

The LFCN is a pure sensory nerve that derives from L2-3 of the lumbar spinal segments. After leaving the lumbar plexus, it runs inferiorly over the surface of the iliopsoas muscle. At the medial side of the anterior superior iliac spine, LFCN passes under the inguinal ligament and runs over the sartorius muscle. It penetrates the overlying femoral fascia, fanning out and branching into thin cutaneous nerves, which distribute mainly to the lateral aspect of the thigh. MP caused by compression of the LFCN at the inguinal ligament level is common because the LFCN bends at an angle of about 90 degrees to pass from the pelvis through the inguinal ligament to the thigh^(1,2,8,9).

There is a nutrient arterial system of LFCN. The accompanying artery of LFCN (LFCA) always accompanied LFCN and had some branches that communicated with circumflex iliac artery after LFCN left the inguinal ligament⁽¹⁰⁾. The circumflex iliac artery is constant anatomical structure overlying the LFCN. However, the report for circumflex iliac artery to cause MP is rare.

Aszmann *et al.* reported that neuroma of the LFCN can be caused by the role of iliopubic tract and circumflex iliac artery in nervous compression. Also there are five types of anatomical variations of the LFCN by the Aszmann's study. In type C and D, the LFCN lies totally under the inguinal ligament⁽¹¹⁾. If the LFCN passes entirely down the inguinal ligament, it is likely to be under pressure by the circumflex iliac artery. In this case, the LFCN passed totally under the inguinal ligament, and the circumflex iliac artery was tortuous and engorged by the surgical findings. It seemed that the cause of the MP is the compression of the LFCN by this vessel. In summary, the author reported a rare case of MP caused by the compression of the LFCN by the circumflex iliac artery under the inguinal ligament. Physicians should be aware that the circumflex iliac artery could be responsible for MP.

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