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전신경화증 환자에서 족배동맥 압박에 의한 Blue Toe Syndrome의 수술적 치료: 증례 보고

(Surgical Treatment of Blue Toe Syndrome due to Dorsalis Pedis Artery Compression in A Patient with Systemic Sclerosis: A Case Report)

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Purpose: Blue toe syndrome (BTS) is characterized by painful cyanotic discoloration of the toes and is commonly associated with embolic or hematologic disorders. Compressive angiopathy is a rare cause, and its association with systemic sclerosis has seldom been reported. We present a case of BTS caused by dorsalis pedis artery compression in a patient with systemic sclerosis and describe successful surgical management.

Methods: A 26-year-old woman with systemic sclerosis presented with chronic ulcers and cold intolerance of both great toes. Physical examination revealed weak dorsalis pedis pulses and delayed capillary refill. Digital subtraction angiography demonstrated short segmental luminal narrowing of the dorsalis pedis artery and lateral tarsal branches with delayed distal runoff. Minimal improvement after intraarterial nitroglycerin injection suggested extrinsic compression. Based on multidisciplinary evaluation, surgical decompression with partial resection of the extensor hallucis brevis muscle and tendon, combined with periarterial sympathectomy, was performed in two stages.

Results: Intraoperatively, the extensor hallucis brevis was found to directly compress the artery. Arterial flow improved immediately after decompression. Postoperatively, toe ulcers healed without further intervention, and cold intolerance and discoloration resolved. At 9 months, arterial pulses and capillary refill were normal, with no recurrence.

Conclusion: BTS may result from compressive angiopathy of the dorsalis pedis artery, particularly in patients with systemic sclerosis. Advanced vascular imaging and multidisciplinary assessment are essential for diagnosis. Surgical decompression can be an effective treatment option in selected patients.

Fig. 1. Preoperative clinical photos. (a) Plantar view of the right foot. (b) Dorsal view of the right foot. (c) Chronic ulcer on the right great toe. (d) Plantar view of the left foot. (e) Dorsal view of the left foot. (f) Chronic ulcer on the left great toe.

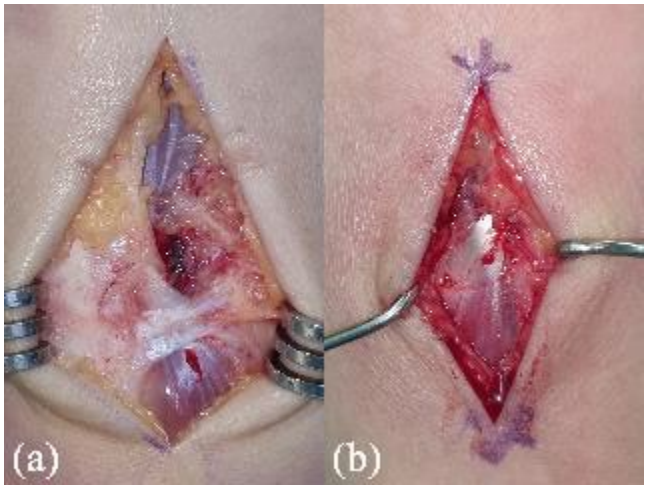

Fig. 2. Intraoperative findings of both dorsalis pedis vessels. The extensor hallucis brevis muscles and tendons were pressing across the dorsalis pedis vessels. (a) Right. (b) Left.

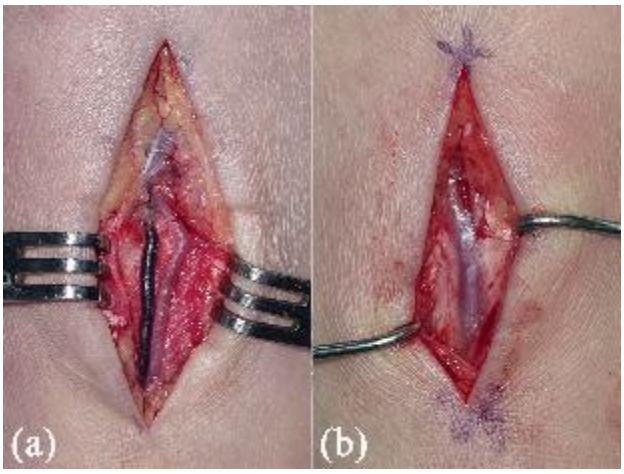

Fig. 3. Immediate postoperative findings of both dorsalis pedis vessels. The extensor hallucis brevis muscles and tendons were resected to completely relieve compression, and periarterial sympathectomies were additionally performed to promote smoother blood flow. (a) Right. (b) Left.

Fig. 4. 9- month postoperative clinical photos. (a) Plantar view of the right foot. (b) Dorsal view of the right foot. (c) Previous ulcer site on the right great toe. (d) Plantar view of the left foot. (e) Dorsal view of the left foot. (f) Previous ulcer site on the left great toe.