Anterior Tarsal Tunnel Syndrome With Thrombosed Dorsalis Pedis Artery: A Case Report

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1. Introduction

The anterior tarsal tunnel syndrome denotes the entrapment of the deep peroneal nerve under the inferior extensor retinaculum. Although various etiological factors have been reported to cause anterior tarsal syndrome, its occurrence with thrombosed dorsalis pedis artery has not been reported in the English literature.

Case Presentation:

A 40-year-old male patient was presented with the history of persistent pain along the dorsal surface of right foot, which was aggravated with the activities. Conservative management was tried without much relief. Diagnosis of anterior tarsal tunnel syndrome was made and the patient was planned for surgery. Thrombosed dorsalis pedis artery was found along with two adjacent collateral vessels. Retinaculum was released and nerve was mobilized. Tight compartment got released. Postoperative period was uneventful. No recurrence was seen on follow-up.

Conclusion: The anterior tarsal tunnel syndrome is a known disease. A high index of clinical suspicion is required while dealing with the chronic cases. A detailed history to rule out any traumatic event is necessary too. Timely investigations and surgical release give dramatic relief.

Keywords: Anterior Tarsal Tunnel Syndrome; Thrombosed artery; Tarsal Tunnel Syndrome
due to osteophytes, ganglionic cysts or lipomas. These factors cause compensatory forefoot valgus leading to subtalar supination and midtarsal inversion leading to the pressure over the nerve.

Distally the nerve is vulnerable to injury due to lack of protective sheath. Extrinsic factors like tight shoe laces or the external trauma can cause injury to the nerve. Edema or fibrosis causes pressure over the nerve and neural ischemia. The relation of nerve with the tendons and the vascular structures is depicted in Figure 1. The little space in the tunnel formed by the inferior extensor retinaculum and the close proximity of the structures make the nerve vulnerable to compressive neuropathy. In an already small space, any addition to the structure can cause pressure over the nearby structures. The final brunt is to be burnt by the nerve, as happened in our case.

The patient had trivial trauma at the ankle, which can cause thrombosis at the dorsalis pedis artery. Over time, the collaterals had developed to compensate for the dysfunctional arterial segment and to bypass it. Addition of new vessels in the already tight tunnel had resulted in the pressure over the nearby structures, including the nerve. The mixed sensorimotor nature of the deep peroneal nerve leads to both sensory and motor symptoms as in our case.
References