modality of treatment is also indicated for neonates with complex defects and large muscular VSDs, where a one-stage repair via sternotomy can be applied (10). Our case, first in Turkey, was closed successfully by perventricular closure using Amplatzer muscular VSD device.

Conclusion

We conclude that Amplatzer muscular VSD occluder seems to be a safe and effective device for closure of muscular VSDs. Further clinical trials with this device are underway. This hybrid technique involving both pediatric cardiologists and cardiothoracic surgeons can be utilized to close muscular VSDs even in small babies with ease.

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Bilateral common peroneal nerve palsy following cardiac surgery

Kardiyak cerrahi sonrası bilateral komon peroneal sinir paralizi

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Introduction

Although cardiac surgery improves the life expectancy in the patients with severe heart diseases, the post-operation period is associated with severe complications (1-4). Even though peripheral nervous system complications are less frequent and usually less severe than others, they have an importance due to a source of additional postoperative disability. In this report, we presented 3 cases with bilateral common peroneal nerve palsy (CPNP) following cardiac surgery.

Case 1

A 52-year-old man was referred to our clinic for bilateral foot droop with sensory loss on the lateral aspect of his legs and feet. The patient underwent a three-vessel coronary artery bypass graft surgery 3 weeks ago and his complaints started immediately after surgery. He had no concomitant disease except 11 years' history of diabetes. The patient's examination revealed weakness of feet dorsiflexion/eversion (2-/5) and diminished sensation on the dorsum of the feet and anterolateral side of both calves. Nerve conduction studies showed prolonged latency and slow velocity around the fibula head as compared with distal segment for common peroneal nerve. Small compound muscle action potentials from the extensor digitorum brevis muscles were observed by both proximal and distal stimulation. Needle electromyography (EMG) of bilateral tibialis anterior and peroneus longus muscles revealed motor unit potentials of normal amplitude, duration, and phasicity; increased insertional activity, 2+ fibrillations, 2+ positive sharp waves and reduced recruitment. An isolated partial lesion of CPN bilaterally was diagnosed. The patient started in a physical therapy and rehabilitation program (PTRP) including active assistive ranges of motion exercises and electrical stimulation for 5 days per week for 1 month, and then home exercise program was prescribed. In addition to foot orthosis, correct positions of ankles were described. At the 3rd and 6th months, there was a significant improvement clinically. In addition, repeated needle EMG showed reinnervation of motor units via axonal regeneration.

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Cases 2 and 3

The patients were 50 year-old man who had orthotropic hearth transplantation and 64 year-old man who had mitral valve annuloplasty and aneurysmectomy with Jatene procedure. They were admitted to our clinic with a 1-month history of bilaterally foot droop following operations. They had no concomitant pathology. The patients' examination revealed bilateral weakness of foot dorsiflexion/eversion (0-2/5) and diminished sensation on the bilaterally common peroneal nerve distribution. The EMG study confirmed the diagnosis of bilateral partial axonal degeneration of the CPNP. The patients received a 3-weeks' PTRP prescribed above. Then, they followed a home training program. At the 3rd and 6th months, the both patients showed a significant improvement. Their control needle EMG studies also showed their improvement with a full recruitment pattern and reinnervation of motor units.

Discussion

In the lower extremity, peroneal nerve palsy is the most frequently seen mononeuropathy, which is commonly due to its compression or traction around the knee as it passes lateral to the surgical neck of the fibula (5, 6). Numerous injury mechanisms including stretch/contusion, traction, laceration, entrapment and compression can play a role for CPNP in this location.

On the other hand, the CPNP seldom occurs bilaterally at the same time leading a source of additional postoperative disability (7). This complication requires simultaneous compression to both legs as previously reported following skeletal traction for bilateral femoral fractures, prolonged squatting, and external compressive wraps for pelvic injuries (8). Since our patients were put in the supine position; the legs were slightly flexed and externally rotated on the knee roll, this position could be the most plausible etiologic factor in our cases. In addition, low perfusion pressure and haemodilution in the cardiac surgery may induce further hypoxia of the nerves. Although some studies reported that diabetes might be a predisposing factor for CPNP (9), we are not able to conclude its relevance in our cases because only one patient had diabetes.

Conclusion

Common peroneal nerve palsy during operations can be prevented by remembering that common peroneal is at risk around the knee and by knowledge about that hampered mobilization under anesthesia may have resulted in ischemia and subsequent injury to traction for peripheral nerves. If develops, EMG is necessary to define diagnosis and to assess the severity of the lesion. For the treatment, a PTRP can be enough as seen in our cases. Finally, the patients with cardiac surgery should be carefully observed in the postoperative period for bilateral CPNP.

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