nerve palsy. Murry and Schalfly[4] reported moderate lateral laxity as a complication in one half of their patients who had excision of proximal fibula. All these studies, including ours, show that these complications are usually mildly symptomatic and respond to vigorous physiotherapy. The functional deficit after partial fibulectomy can further be minimised by giving due consideration to following points:. Peroneal muscles should not be cut, peroneal nerve must not be damaged and distal fourth of bone must be left to maintain a stable ankle.

References

1. **Pho R.W.H.** Malignant giant cell tumour in distal end of radius. Treatment by a free vascularised fibular transplant. J Bone Joint Surg 63 A. **1981**.
2. **Gore D.R. Gardner G.M. Sepic S.B. et al:** Function following partial fibulectomy clin orthop 220;206, **1986**.
3. **Enneking, W.F, Eady, J.L, and Burchardat H:** Autogenous bone graft in the reconstruction of segmental skeletal defects. J Bone Joint Surg. 62A; 1039. **1980**.
4. **Murry J.A., and Schalfly B,** Giant cell tumours in distal end of radius J Bone joint surg. 68A:687, **1986**.

Residual Functional Deficit After Partial Fibulectomy For Bone Graft

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A study to assess residual functional deficit at donor site after partial fibulectomy is presented. Twenty five cases were included in this study who had partial fibulectomy during 1992 to 1994. The indications for fibulectomy were, osseous defect of tibia in open fractures, giant cell tumours of distal radius and congenital anomalies of lower limb. Sixty percent of the cases had residual deficit in the form of muscular weakness, nerve damage and causalgia. With the improvement of technique these residual deficits can be minimised.

***Key Words** : Partial fibulectomy, bone graft.*

Use of fibula to fill defects in long bones has taken a new dimension in the last two decades, due to additional possibilities offered by microsurgery and external fixator. Now we can use even longer fibular grafts, with better results. The indications to use fibular grafts are increasing, yet there are only few reports to document long term effects of fibulectomy on the donor leg.The purpose of this study was to document the residual functional deficit caused by partial fibulectomy.

Material and Methods

Twenty five patients were included in this series who had partial fibulectomy during 1992-94. Twenty patients were male and five female. The youngest patient was 10 years and eldest was 60 year old. Twenty cases had partial fibulectomy to treat open tibial fracture with bone loss. Middle 2/3 of fibula was used in this case. Five patients had proximal fibulectomy to replace distal half of radius after excision of giant cell tumour. In one case partial fibulectomy was done for chronic osteomyelitis of fibula and in one case to correct congenital anomaly.Classical Henry approach was used to obtain the fibular grafts. To minimise the functional deficit at donor site due consideration was given to the following points during the surgical procedure; distal one fourth of fibula was not used for grafts. Peroneal muscles were not detached from the fibula, common peroneal neve was identified during excision of proximal portion of fibula.All these cases were followed up for two years. They were assessed subjectively for local discomfort, leg weakness, knee instability, numbness in foot and difficulty in going upstairs. We looked for any swelling of knee and ankle joints, weakness of leg, range of movement at knee, ankle and foot. Electromyographic studies were done in all cases to detect funcional loss in leg muscles. Nerve conduction studies were done in patients who had numbness in foot and burning pain in the leg.

Results

Ten patients, with excision of middle third of fibula were symptomatic. They had diffuse pain at donor site and slight weakness in leg. They were treated with analgesics and physiotherapy. Two patients developed paraesthesia in leg and along the outer border of the foot. One patient developed loss of extension of big-toe and numbness in first web space. Nerve conduction studies revealed mild nerve injuries in these patients.Out of five patients who had excision of proximal part of fibula, one developed foot drop due to injury to common peroneal nerve. One patient developed mild lateral laxity of knee joint but he had full range of motions and no difficulty in climbing up stairs. The break up of various functional deficit is shown in table 1.

Table 1 *Functional Deficit*

Symptoms	*n=*	*%age*
Diffuse pain & mild leg weakness	10	40
Paraesthesia in leg and outer border of foot	2	8
Loss of extension of big toe	1	4
Foot drop	1	4
Lateral knee joint laxity	1	4

Discussion

Indications to use fibula as a bone graft are increasing day by day. Its length, configuration, stability and predictable vascular pedicle make it an ideal donor.[1] There are differing opinions regarding functional deficit after partial fibulectomy. Some studies show that entire proximal 2/3 of fibula may be removed without materially disabling the leg. In our series of twenty five patients, fifteen (60%) developed some functional deficit,. though they were mild in majority of cases and responded to symptomatic treatment and physiotherapy. Our results are in conformity with reports of Gore et al,[2] who conclude that most patients will have complaints of mild muscular weakness after removal of a portion of fibula.In this series five patients had proximal fibulectomy to replace distal radius. The configuration of head of fibula makes it an ideal donor for distal radius. Among these five patients one developed mild lateral knee joint laxity and another patient, foot drop, due to common peroneal nerve injury. Such injuries have also been reported in literature. Enneking et al[3] reported forty cases of segmental fibular grafts. Two cases had a peroneal