Fig. 1

Fig. 2

at five months and the right at seven months. At nine months he had protective sensation to the end of his toes. At one year (Fig. 2) he was walking freely and climbing stairs without an aid. He is very grateful for his surgery and has had no psychiatric relapse.

Discussion. Although Chen, Yang and Chang (1983) in their series of 250 reimplants had included 35 of the lower limb, few cases have been reported in western literature. The largest detailed series of nine reimplants had five failures, but the two sharp (clean-cut) amputations were both successful (Kutz, Jupiter and Tsai 1983).

In the psychiatric literature Stewart and Lowrey (1980) and De Muth, Strain and Lombards-Maher (1983) have reported on self amputation. Both groups feel that replantation is well worthwhile in the acute psychiatric patient, and Stewart reported no reamputations during a five to eight year follow-up. The psychiatrist in our case feels that reimplantation helped the patient's psychiatric recovery.

The significant factors contributing to the successful outcome were: 1) the injury was a sharp one with little crushing; 2) the feet were correctly dealt with by the emergency services; 3) the tibial shortening avoided tension in the vessels and nerves and allowed primary skin closure; 4) early weight bearing was protected; and 5) bony union and recovery of sensation were obtained without skin breakdown.

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TOTAL AGENESIS OF FIVE CERVICAL VERTEBRAE: BRIEF REPORT

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Case report. A seven-year-old boy was brought to the orthopaedic department because of the shortness of his neck. He was the third of four siblings and no other

members of his family were affected. His mother was, however, the daughter of his father's uncle.

On examination, the shortness of the neck, the webbing and the abnormal hair line were immediately apparent (Figs 1 and 2). The scapulae were unduly high and he had a thoracic kyphosis. Flexion and extension of the neck were about half the normal range and lateral flexion in both directions was even more limited; rotation, however, was almost normal. There were no neurological disturbances.

The provisional diagnosis was Klippel-Feil syndrome, but radiographs did not show the fusions which

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Fig. 1

Fig. 2

Fig. 3

Fig. 4

are seen in that condition. Instead they showed that the five distal cervical vertebrae were absent, the axis articulating with the first thoracic vertebra; the atlas and the axis were present but showed spina bifida (Figs 3 and 4). These anatomical peculiarities were confirmed by CT scan.

No other congenital deformities or deficiencies were found. He (and his parents) were taught active and passive exercises, but no other treatment was given. He is being followed-up partly to see if the thoracic kyphosis needs treatment.

Discussion. Klippel-Feil syndrome, which our case

resembles clinically, results from failure of segmentation, with synostosis of a variable number of cervical vertebrae. The cause is unknown and treatment is usually conservative, though operation may occasionally be indicated in the hope of improving the appearance or the range of movement of the neck.

Total agenesis of five cervical vertebrae, as in our patient, has not, as far as we know, been reported previously.

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