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AMPUTATION AND PROSTHETIC FITTING IN A PATIENT WITH GUÉPAR ENDOPROSTHESIS

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Ischaemic gangrene of the foot in a patient previously fitted with an arthroplasty of the knee (Guépar) was treated with below-knee amputation. The endoprosthesis was retained and the patient was fitted with a modified PTB prosthesis. The functional result is satisfactory.

Key words: amputation; arthroplasty; knee joint; prosthesis

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Knee arthroplasty is an increasingly common operation in routine orthopaedic practice. Most of the patients are elderly and one must reckon with the risk that at a later date peripheral circulatory disturbance will necessitate ipsilateral leg amputation.

This problem arose in a 34-year-old woman with severe chronic rheumatoid arthritis. She was virtually confined to a wheelchair until 1970, when bilateral Ring arthroplasty of the hips enabled her to walk with the aid of crutches and to work as a telephonist.

Progressive involvement of the knees, however, produced destruction of the articular surfaces and contactures. Once more she became chairbound. Bilateral Guépar arthroplasty was therefore performed early in 1975. Remobilization was uncomplicated.

About four months after the Guépar operations she was fit to resume work, but she wanted to go to Spain on an organized holiday for disabled persons. After 2 weeks in Spain she became ill with rapidly developing paralysis, paraesthesia and pain, particularly in the legs. She returned to Sweden and examination at this clinic revealed rheumatic polyneuritis with symmetrical peripheral paralysis and impaired sensitivity.

In consultation with rheumatologists the patient was immediately given immunosuppressive agents and cortisone. Two days later, however, signs of peripheral circulatory insufficiency appeared in the left foot and she was transferred to the rheumatological unit. Despite energetic measures, including pressure chamber therapy, the foot became gangrenous and she was returned to the orthopaedic clinic for amputation.

The decision to attempt below-knee amputation was based on the functional outlook. The expected functional handicap was incomparably less than that entailed by an above-knee amputation and the good function in the endoprosthesis indicated favourable prospects for weight-bearing and control of the prosthesis. In this decision the patient concurred.

On November 11, 1975 the left lower leg was amputated according to Burgess (1969). The tibia was divided about 16 cm distal to the tibial plateau. The mar-

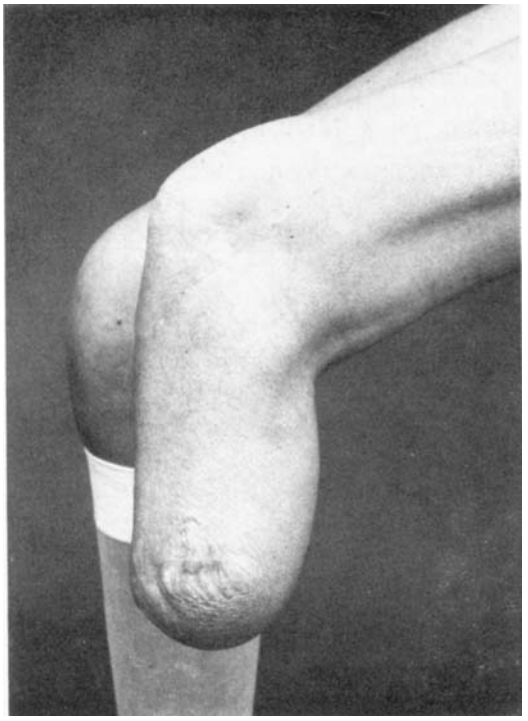

Figure 1. Amputation stump.

Figure 2. The patient with the prosthesis.

Figure 3. Roentgenogram of the amputation stump with PTB prosthesis.

row at that point appeared to be normal. The amputation wound healed normally within 3 weeks (Figure 1). After 3 more weeks the first prosthesis was fitted. It was a combination of PTB with double-bar and thigh corset Figures 2 and 3). The right foot was simultaneously fitted with an extension bar to correct persistent foot drop.

The patient rapidly became ambulant. Aftercare was given at the rheumatologic unit. Her general health improved and after some time a light bathing prosthesis of the ordinary PTB type was fitted, which enabled her to walk for short distances by the pool. At check-up more than 6 months after the amputation she was walking—as preoperatively—with two crutches. She had no discomfort from the stump and had resumed work as a telephonist.

DISCUSSION

Circulatory disturbance with ischaemic gangrene of the foot below a total knee prosthesis may be in future a not unusual combination. Below-knee amputation can offer a solution in these cases, provided that the arthroplasty is functioning satisfactorily. A relatively long tibial stump must be left to fit under the shaft and cement of the prosthesis, but a dorsal flap should cope with the skin problem in most cases.

The reason why this patient was not initially fitted with an ordinary PTB prosthesis with cuff suspension was the fear of excessive strain on the fixation of the endoprosthesis, particularly in lateral and rotatory movements. The justification of this decision remains an open question. The favourable experience with the bathing prosthesis indicates that the ordinary type might have functioned equally well.

In elderly or severally disabled persons, however, relatively little knee function is lost if a PTB is supplemented with double bars and corset. Moreover, the discrepancy between the lower-leg prosthesis and the knee function is less than in ordinary amputation cases, since the Guépar prosthesis also has only a simple rotatory axis.

REFERENCE

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