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Subtotal calcanectomy: should be this surgical procedure still considered a safe surgical approach for heel ulcer with osteomielities of the calcaneus bone? Review of a large cohort of diabetic patients

*+Carlo Caravaggi, *Sganzaroli A.B.,* Ferrari L., *Pogliaghi I., *Cavaiani P., *Fabbi M *Capello F., *Sacchetto L. *Center for the study and treatment of diabetic foot pathology Abbiategrasso Hospital Milan – Italy - +University Vita-Salute San Raffaele Milan - Italy

Introduction: Heel ulcer represent a serious problem in diabetic patients suffering from neuropathy or neuroischaemic condition. Due to the difficulty in obtaining the healing of the lesion, often correlated to improper treatment, very often osteomyelitis of the calcaneus bone represents the late complication in clinical story of these patients. Even if superficial ulcer with bone exposition can be treated with good results with conservative treatment as off-loading cast, advance dressing and products of tissue engineering, surgical procedure (ulcerectomy and removal of the infective bone) is the only way to get the healing of the lesion together with the stop of the bone infection in case of large ulcer with infected bone exposition. . In order to evaluate the safety ed the effectiveness of the subtotal calcanectomy in the period from to we have submitted to this surgical procedure patient affected by heel ulcer with exposition of infected calcaneous bone.

Materials and Method: We have treated 10 neuropathic patients and 18 neuroischemic patiens. The characteristics of population were: 1) mean age was 64±10 years 2) mean duration of illness 32± 12 years 3) Typo 2 23 pts Type 1 2 ptas. All the patients with PVD where submitted first to a surgical procedure with the aim of removal of infected tissue followed by angiography and revascularisation procedures (PTA or BY PASS). Neuropathyc patients were submitted, in case of severe infection, to a first surgical step consisting in wide and sharp debridment of the lesion followed by daily dreassing or VAC therapy in order to obtain a clean wound suitable for the subtotal calcanectomy. When the ulcer was clean at the presentation the subtotal calcanectomy was directly performed. From the technical point of view the procedure consisted of a wide ulcerectomy with esposition of the calcaneus bone that was transacted with sagittal saw. The cutaneous flaps were the sutured or, in case of large lack of skin, rotated in different direction, in order to cover the bone. The residual ulcer is treated directly or in a following moment with a skingraft. **Results**: in a period of follow up of 23±18 monts we observed the healing of the lesion in 12 out of 25 patiens (48%) and recurrence of the ulcer in 9 patients (36%) Patients needed a below knee amputation for post surgical complication (infection in side of intervention). As far as walking ability we found that 14 patients used protective shoes (rigid sole with protective insole) while 7 patients walked with tutor. We lost at follow up 3 patient. **Conclusion:** data coming form this observational clinical study confirm that this surgical procedure presents high rate of failure correlated to 1) deficit of vascular supply of the calcaneous skin secondary to different degree of PVD 2) different degree of lost of skin secondary to the infection. Three keys points are related to the success of the procedure: 1) in case of PVD revascularisation procedure are mandatory before treatmen 2) clean wound must be achieved before intervention 3) healing by secondary intention after the surgical step should be considered a suitable approach.