

## Technical note

# Reduction of skin problems at the Alpha socket/skin interface

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### Introduction

New interface liners, for example “Alpha” and “TEC” have been extremely successful in improving the overall comfort of amputees.

It has been observed that up to 10% of patients using the newly introduced total contact socket interfaces develop a skin eruption at the proximal edge of the liner. Other problems include the pooling of sweat and pain resulting in a rejection rate of 19% (Mullick, 1997).

The skin eruption is in the form of an erythematous eruption sometimes with an exudate.

Occasionally it is a true allergic reaction to the various materials used but in some cases it appears to be due to a mechanical problem at the top 2-3cm of the liner.

### Case 1

WD is a 64-year-old man with severe atherosclerosis resulting in a dense hemiplegia as a result of a stroke 5 years prior to developing gangrene in his toes. Amputation at trans-tibial level healed well and he was initially mobilised with a patellar-tendon-bearing prosthesis.

Considerable discomfort however developed in the stump 3 months after delivery of the prosthesis. He was subsequently fitted with an Alpha Liner which he found very comfortable.

At a review clinic one month after delivery he complained of an eczematous eruption at the top of the liner. The rest of the stump was however unaffected and contact allergy to the liner was not considered a likely cause of the problem.

The scalloping of the top of the liner (Fig. 1) has resolved the problem.

It is suggested that the scalloping may reduce skin shear at the top and thus reduce skin trauma.

### Case 2

JS is a 74-year-old man with diabetes mellitus related trans-tibial amputation.

His prosthetic history was complicated by the continuous presence of pain in the stump, which

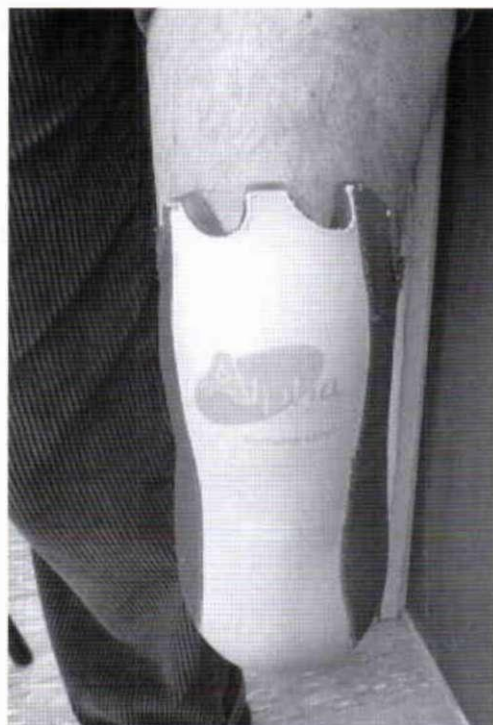


Fig 1. Scalloped edges to reduce skin shear at the top of the liner.

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repeated socket changes failed to resolve.

The provision of an Alpha Liner did help somewhat but did not completely resolve the patient's pain. He was however able to use his limb more comfortably than before. He developed a skin eruption similar to Case 1 and this was again resolved by the scalloping of the liner top.

### **Summary**

Two cases are presented in whom the provision of an Alpha Liner relieved the patients' stump discomfort but developed a skin

eruption at the top of the liner.

This was resolved satisfactorily by cutting scallops into the top of the liner.

### **REFERENCES**

- MULLICK S (1997). Efficacy of silicone-gel impregnated prosthetic sock in optimisation of interface problems of ambulatory transtibial amputees wearing patellar tendon bearing prostheses. *The Compendium*. Silver Jubilee Annual Scientific Meeting, Quality Scotch Corner Hotel, 23rd-25th October 1997, ISPO United Kingdom National Member Society 1972-1997. Edited by D. Simpson. ISPO (UK), 1997. p36-37.