

# FLAMINAL® FOR WOUND HEALING FOLLOWING LIMB-SPARING SURGERY IN A 13 YEAR OLD FEMALE WITH SYNOVIAL SARCOMA

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## Summary

This communication describes the wound management following foot sparing resection in a 13 year old female with synovial sarcoma of her left foot involving the first and second metatarsals.

## Synovial sarcoma

Synovial sarcoma is a rare type of soft tissue sarcoma that mainly occurs in the extremities. It is an aggressive tumour and tends to occur in adolescents and young adults. Treatment depends on the age of the patient, location of the tumour, its size, its grade and the extent of the disease. The most common treatment is surgery with radiotherapy or chemotherapy.

## Case study

The patient, a 13 year old female, was diagnosed with synovial sarcoma. Treatment of the tumour consisted of three cycles of chemotherapy and surgical excision, however histology revealed some satellite nodules within soft tissue and further excision with insertion of a cement spacer was performed one month later to achieve clearance. This wound healed within 8 weeks of surgery. A further round of chemotherapy was completed and, due to the age of the patient and the aggressive nature of the tumour, a course of radiotherapy was also completed.

Both patient and parents preferred foot sparing surgery although this was complex due to the involvement of the toe and so required reconstructive surgery which was performed three months later. Reconstructive surgery of the second metatarsal was performed with free fibula osteocutaneous flap. Unfortunately this flap failed after 2 days and the patient returned to surgery for re-exploration of free flap, salvage of artery, vein and re-insertion of fibula segment with a flap to dorsum of foot. The wound failed to heal and the patient was taken back to theatre after 5 weeks for debridement and application of a skin graft plus Vacuum assisted closure (VAC) therapy to assist healing. Progress of the wound was slow and after five months the decision was made to remove the metal plates and reapply VAC therapy (Figure 1). The wound was still slow to progress; microbiology confirmed the presence of Staphylococcus aureus and coliforms. The fibula transplant remained completely exposed and so the bone graft was removed and VAC therapy once more applied.

Again, wound healing remained slow and with the wound at 5 x 1cm VAC therapy was stopped and Flaminal® Forte applied to the wound (Figure 2).

Figure 1. Plates in foot remain exposed



Figure 2. Day 0 - wound measured 5 x 1cm prior to Flaminal® treatment



## Results with Flaminal®

The dressing was changed after 3 days and the wound had considerably improved; granulation tissue was evident in the wound bed with reduced wound margins and no visual signs of infection (Figure 3). Dressing changes were made twice per week until complete healing was achieved three weeks after commencing Flaminal® Forte. These dressing changes were less traumatic than under the previous regimen. Flaminal® Forte reduced dressing associated pain and ensured the wound remained free from infection. The patient found Flaminal® Forte to be comfortable, and as the dressing is not bulky the patient was able to wear normal footwear and her mobility was improved.

Figure 3. Day 3 - granulation tissue evident, reduced wound margins and no visual signs of infection after 3 days



## Discussion

The patient and parents were keen to preserve the toe although only if the foot remained functional. Osteocutaneous flaps represent a real alternative to amputation. However, they, like any wound, can be susceptible to complications. Complications may be divided into surgical and specific. The surgical complications are related to the site involved but include the general complications of wound infection, wound breakdown, neurologic or vascular injury, and hematoma or seroma formation. Specific complications associated with this tumour are local recurrence and distant metastases. The risk of local recurrence is directly proportional to the adequacy of surgical clearance. Therefore, a wide excision is mandatory to reduce this risk.

In this patient, the free fibula osteocutaneous flap failed, the plates in the foot had to be removed and the bone graft was removed. After each intervention VAC therapy was applied, however the wound never progressed towards healing and microbiology identified Staph aureus and coliforms. At this stage the team decided to change wound treatment and selected Flaminal®, an antimicrobial alginate dressing. Flaminal® has a unique dual mode of action: it removes potentially damaging wound fluid from the wound bed and it has a broad spectrum antimicrobial effect with no demonstrable cytotoxicity.

## Conclusion

Flaminal® Forte kept the wound free from infection and facilitated healing in this complex surgical wound, thus preventing amputation in a young patient.

## Benefits to patient

- Comfortable
- Exudate management
- Reduced dressing associated pain
- Ability to wear normal footwear with dressing
- Improved mobility
- Wound remained free from infection until closure