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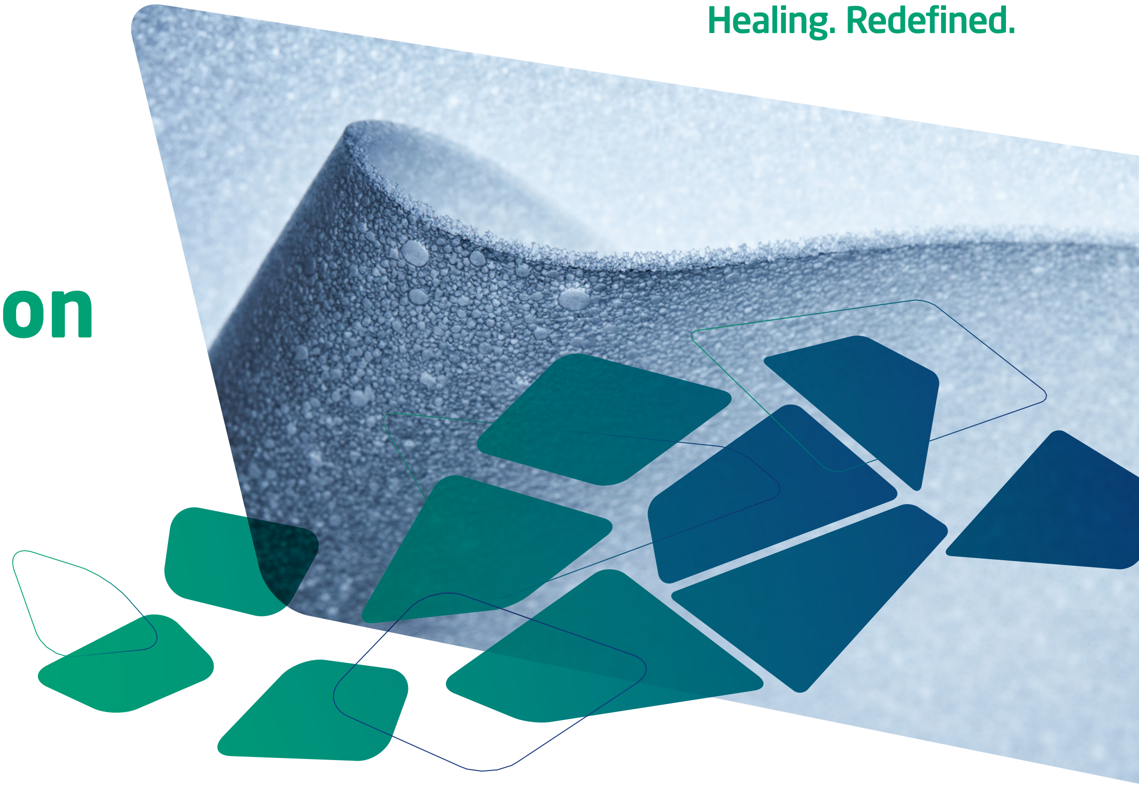

Clinical Publication Update

November 2024

Gorman N, McCrossan S, Kelly J.

Excision of a large trichilemmal carcinoma of the back with staged reconstruction using biodegradable temporizing matrix (BTM): A case report.

JPRAS Open. 2024; 41:104–9.
https://doi.org/10.1016/j.jpra.2024.05.010

Published by the team at the Department of Plastic Surgery, Cork University Hospital, Wilton, Ireland.

The authors report on the case of a 58-year-old woman who presented with a large lesion on her back covering approximately 8% total body surface area that had been evolving for many years. The lesion was diagnosed as a trichilemmal carcinoma, a rare, locally invasive neoplasm that can originate from a hair follicle. The lesion was surgically removed leaving a defect measuring 30 × 27.5 × 3.6 cm.

NovoSorb BTM was applied to the wound and inset with multiple staples to ensure adherence to the resulting wound bed. A vacuum-assisted closure (VAC) and silver-impregnated dressings were applied over the NovoSorb BTM.

There were no wound complications at 6 weeks post-op with weekly VAC changes. A split-thickness skin graft was harvested using a hand-fenestrated 1:1.5 mesh with VAC application. There was 95% skin graft take at Day 5 post-grafting, and the wound was fully healed at 6 weeks. There was no obvious meshed appearance of the wound that would be expected with split-skin grafting without NovoSorb BTM application.

In this case, NovoSorb BTM was used successfully for reconstruction of the sizeable defect by optimising graft take and enhancing aesthetic outcome. This has not been previously described for cases of trichilemmal carcinoma.

Figure 1: Lesion pre-excision, superior view.

Figure 2: Wound review, day 5 post split-thickness skin graft (SSG).

Figure 3: Wound review, 4 weeks post-SSG.

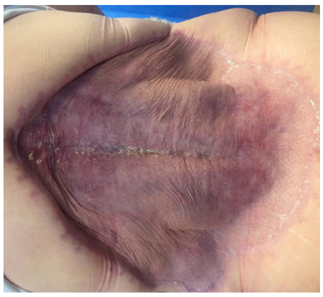

Figure 4: Wound review, 6 months post-SSG.

Nguyen K, Fleming N, Adamson S, Ng S.

Perineal hidradenitis suppurativa: two case studies and a review of the literature.

Dermatology and Dermatitis. 2024;9 (3).
https://doi.org/10.31579/2578-8949/151

Published by the team at the Department of Plastic and Reconstructive Surgery, Austin Health, Melbourne, Australia.

Hidradenitis suppurativa (HS) is a chronic skin condition characterised by formation of multiple abscesses and sinus tracts that can cause significant reduction in physical and psychosocial quality of life. It is commonly found in the apocrine gland-bearing regions of skin such as the axilla, perineal/perianal and inguinal regions. This article reports the clinical management of two patients with extensive groin and perineum HS.

Case 1: A 53-year-old male with Hurley stage III groin and axilla HS present for several decades. After previous medical treatment with tumour-necrosis factor inhibitors, he was referred for surgical management due to progression with increasing discharge and new tract development severely impacting daily activities. Prior to treating his groin, he had a successful excision and reconstruction of his axilla HS with NovoSorb BTM and application of split-thickness skin graft (STSG), leading to improved quality of life and no recurrence at 1-year follow up. A diverting ileostomy was performed 3 months prior to HS excision. The diseased area was surgically debrided to healthy tissue. After 5 days of vacuum-assisted closure (VAC) dressing, NovoSorb BTM was applied to the clean wound and VAC applied. After 4 weeks, the NovoSorb BTM was well integrated, and the sealing membrane was removed. A fenestrated split-thickness skin graft was applied with a VAC dressing for a further 2 weeks. The ileostomy was reversed at 3 months post-complete wound healing.

Case 2: A 62-year-old male presented with a 10-year history of worsening Hurley stage III perineal and groin HS. He had previously been managed using tumour necrosis factor inhibitors and required a loop colostomy 2 years prior to this surgery. Using the same surgical technique described in Case 1, the NovoSorb BTM was assessed as integrated at 5 weeks with delamination of the sealing membrane and STSG applied. At 3 months post-op, his wound was well healed, and he had resumed normal activities. There has been no disease recurrence to date, and he is planned for reversal of his loop colostomy.

In summary, the authors have a novel technique of staged skin grafting with NovoSorb BTM and VAC dressings that has shown efficacy in closing wounds left by extensive surgical excision of severe HS. These cases demonstrate the possibility of using skin grafting while avoiding wound contracture making it a feasible solution to wound closure in high movement areas of the body.

Figure 5: Case 1 post-operative debridement defect.

Figure 6: Case 1 during integration of NovoSorb BTM after application to the debrided wound bed.

Pilch WT, Kandamany N.

Complex intraoperative defect planning flexibility—post-salvage laryngectomy defect reconstruction with a double skin-paddled radial forearm free flap.

JPRAS Open. 2024; 41:179–82.
https://doi.org/10.1016/j.jpra.2024.06.004

Published by the team in the Department of Plastic and Reconstructive Surgery, Royal Hobart Hospital, Hobart, Australia.

This article is a case report of a 53-year-old female requiring surgical reconstruction of her total laryngectomy defect secondary to recurrent squamous cell carcinoma with extra-laryngeal spread. After total laryngectomy and excision of the surrounding area, a significant anterior defect remained.

Coverage of this defect was to be designed using a tubed radial artery forearm free flap. On the table, the decision was made to modify the flap into a double paddle design to reconstruct the pharyngoesophageal defect and the second skin paddle folded over to reconstruct the cutaneous defect. The associated donor site defect was 17 × 21 cm. This was covered with NovoSorb BTM with skin grafting after delamination of the sealing membrane at week 6. There was complete skin graft take and robust skin evident at 2 weeks post-skin grafting.

This case reinforces the utility of NovoSorb BTM to manage donor sites associated with free flap surgical reconstruction following oncological resection of the affected soft tissue.

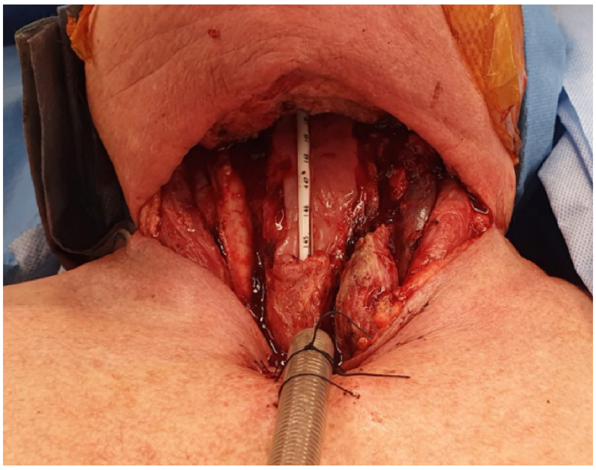

Figure 7: Anterior defect post-laryngectomy requiring reconstruction. A radial forearm free flap was selected.

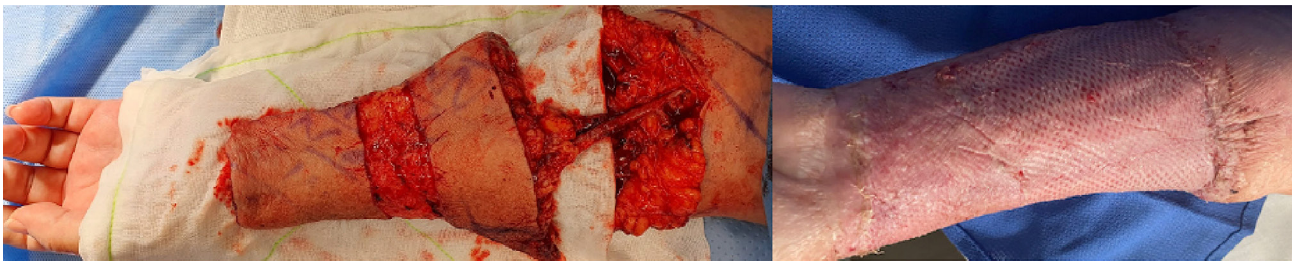

Figure 8: In-situ double paddle design for a tubed radial artery forearm free flap **(left)**. The appearance of the defect at 2 weeks after delamination of NovoSorb BTM and skin grafting with complete take and robust skin is shown **(right)**.

Jou C, Chepla KJ.

Novosorb Biodegradable Temporizing Matrix for reconstruction of complex upper-extremity wounds.

Journal of Hand Surgery Global Online. 2024; 6(5):614-8.
https://doi.org/10.1016/j.jhsg.2024.05.006

Published by authors from the Department of Plastic Surgery, Cleveland Clinic, OH, USA.

This article describes the results of a retrospective single-centre review of patients who underwent surgical reconstruction of upper-extremity wounds using NovoSorb BTM between January 2017 and May 2022.

In total, 51 patients (39 males and 12 females) were included. Wound aetiology included trauma (n=30), burn (n=12), infection (n=8), and vasopressor-related injury (n=1).

The average area of NovoSorb BTM applied was 162.5 cm^2, and the average time from NovoSorb BTM application to wound closure was 90.1 days. Twenty-seven (52.9%) patients underwent skin grafting over the integrated and delaminated NovoSorb BTM, whereas 20 (39.2%) patients did not have skin grafting performed and re-epithelialized spontaneously to achieve definitive wound closure. Those who did not require skin grafting had significantly smaller wound sizes compared to those who required skin grafting (58.5 cm^2 vs 248.6 cm^2; P=0.002). Complications occurred in 14 patients, including infection (n=5), fluid collection (n=5), and template dehiscence (n=4). Despite these complications, wound closure was successful in 92% of patients.

The authors conclude that in the management of complex upper-extremity wounds with exposed bone and tendon, even when devoid of paratenon or periosteum, NovoSorb BTM provided a safe and effective alternative to more complex reconstructive options.

Figure 9: Patient who experienced partial amputation of left hand after firework injury **(A, B)**. After debridement and placement of NovoSorb BTM and complete take of skin graft **(C)**.

Niklaus M, Reinshagen K, Wintges K.

Non-fracture acute compartment syndrome in the upper extremity of a 14-year-old boy: A case report and review of the literature.

International Journal of Surgery Case Reports. 2024; 121:109983.
https://doi.org/10.1016/j.ijscr.2024.109983

Published by the team at the Department of Pediatric Surgery, University Medical Center Hamburg-Eppendorf, Hamburg, Germany.

This article summarises the management of a 14-year-old male who encountered a rare instance of a non-fracture compartment syndrome after a fall during a volleyball game. After an initial delay, the patient re-presented to the hospital with a flexion contracture, hypaesthesia and pronounced circulatory disturbance evident by a pale hand leading to a diagnosis of acute compartment syndrome without fracture.

An emergency fasciotomy of the forearm was performed under general anaesthesia, revealing the suspected—a haematoma within the deep flexor tendon compartment—that was removed. NovoSorb BTM was applied over the exposed wound bed in conjunction with negative pressure wound therapy. A split-thickness skin graft was applied after delamination of the sealing membrane on the NovoSorb BTM.

At 6 months follow-up, good cosmetic results were observed. However, despite intensive physiotherapy and occupational therapy, the patient developed severe Volkmann's contracture from shortening of the forearm muscles with restricted wrist and forearm mobility. To improve mobility, the patient was referred for further treatment involving necrosectomy of the flexor tendons, tendon transfers and neurolysis, with use of an anterolateral thigh (ALT) flap for definitive coverage. Nearly two years after the accident, the hand still has functional limitations but its usability in daily activities has steadily improved.

This article highlights the need for timely diagnosis and management of acute compartment syndrome, particularly in children. NovoSorb BTM provided effective reconstruction of the wound resulting from the surgical exposure of the underlying structures related to addressing the cause.

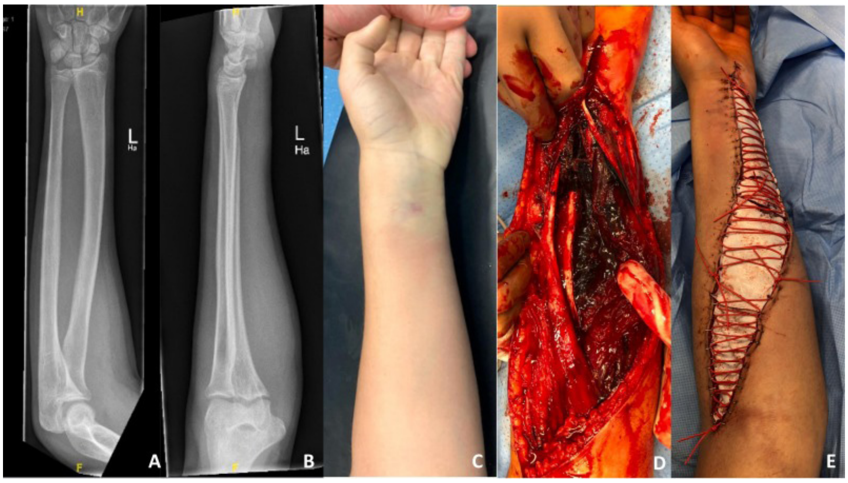

Figure 10: Conventional X-ray in two planes of the injured forearm of the 14-year-old boy showed no sign of fracture **(A, B)**. Upon presentation to the emergency room, the left forearm and hand displayed pronounced circulatory disturbance, manifested by a pale hand **(C)**. Intraoperatively, a haematoma was identified within the deep flexor tendon compartment following decompression fasciotomy **(D)**.

Figure 11: Removing the sealing membrane of the NovoSorb BTM after adequate device integration **(A)** with split-thickness skin graft applied **(B)**. Healed split skin graft showing good cosmetic results on the flexor and extensor sides **(C, D)**. The forearm was subsequently reconstructed using a free anterolateral thigh (ALT) flap **(E)** after further treatment of the Volkmann's contracture identified 6 months after the initial surgical management.

Other recent publications

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Plastic & Reconstructive Surgery Global Open. 2024; 12(7):e5956.
https://doi.org/10.1097/GOX.0000000000005956

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