

# When a pack becomes a plug

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The authors present a case of a surgical wound that was inappropriately packed to the extent that a significant and major deterioration occurred in the expected healing by secondary intention. This is intended to alert surgeons to the fact that careful supervision is required of such seemingly simple and straightforward tasks as the topical treatment of open wounds by inexperienced caregivers.

**Key Words:** Sinus drainage; Sinus wounds; Surgical packing; Wound packing

Packing of wounds is a long-established tradition in surgery (1). Delayed primary closure with frequent packing changes is an accepted way of providing local wound debridement, and is standard practice (2,3). Packing has many variations; diverse mechanical absorbent dressings and chemicals are employed with varied accompanying marketing claims, which supposedly speed up the healing process (4,5).

In the case of deep wounds that contract and form a somewhat narrow-necked sinus in the process of spontaneous closure, irrigation is often used in the last phase until the sinus eventually heals in. The authors present a most unusual case of a patient post-coronary artery bypass graft surgery with an infected sternotomy requiring debridement and a muscle flap reconstruction.

### CASE PRESENTATION

A patient developed delayed drainage from the lower end of his coronary artery bypass graft surgery incision approximately six weeks after an apparently successful closure. There seemed to be no association with residual necrotic tissue because the bone and adjacent costal cartilages had been already debrided. It was thought that the wound would simply close in with simple loose packing and dressing.

Unfortunately, a rather zealous nurse working for an independent home care facility embarked upon the process of tightly packing and expanding this sinus, which initially measured 1.2 cm in diameter (Figure 1). The sinus opening had been expanded to admit two fingers within a period of two weeks of this treatment. In addition a remarkably large (4.4 cm × 6.2 cm × 10 cm) fluid cavity developed, dissecting between the pectoralis major muscle and the skin, creating a plane that had previously been sealed (Figure 2).

Fortunately, the patient required hospitalization for a depressive episode, and in this sheltered environment, looked

## Quand un paquetage chirurgical cause une occlusion

Les auteurs décrivent ici une plaie chirurgicale dont le paquetage a été incorrectement effectué, au point où une détérioration significative et majeure est survenue au cours du processus de guérison secondaire. Cet article vise à alerter les chirurgiens au fait qu'une supervision étroite s'impose lors de tâches en apparence simples, comme le traitement topique des plaies ouvertes par des professionnels de la santé inexpérimentés.



Figure 1) Initial sinus after spontaneous drainage of a seroma

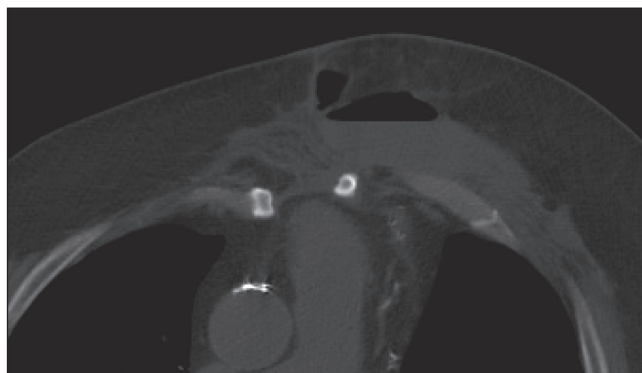


Figure 2) Computed tomography scan, left chest wall abscess, September 17, 2007

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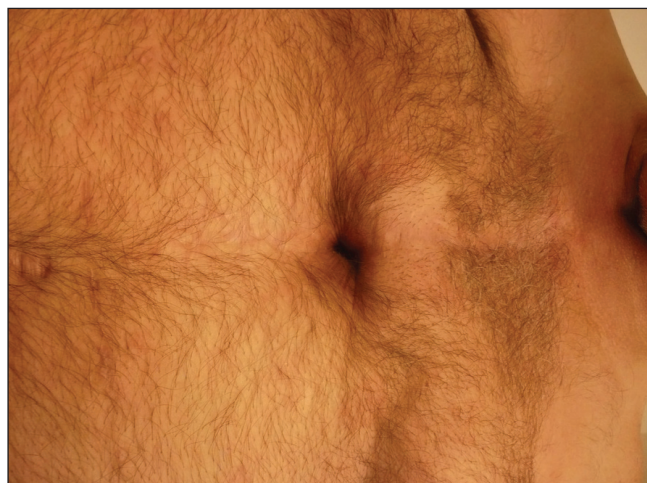


Figure 3) Sinus closing, January 2008



Figure 4) Sinus healing complete

after by experienced surgical nurses who used very light appropriate packing, the wound progressively closed in as expected and eventually healed with an umbilicated scar (Figures 3, 4 and 5).

The images demonstrate how over-packing of a wound to the point of causing a plug can result in a major reversal of the

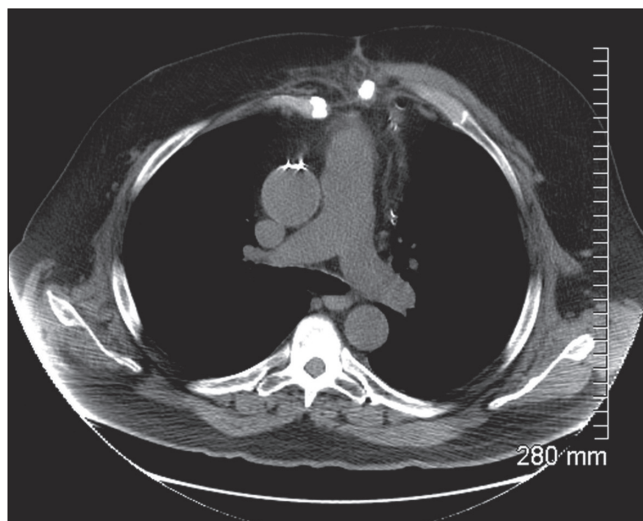


Figure 5) Computed tomography scan showing considerable improvement, January 11, 2008

wound healing process. Indeed, packing can progressively enlarge shallow wounds if it is done in an inappropriately aggressive way.

The present case should remind us all that interventions in medicine should first do no harm, and even simple tasks such as dressings and packing of wounds require appropriate supervision. Sinuses are probably best irrigated only, or treated with a wound vacuum system. Ill-advised packing can have deleterious consequences, as seen here.

## REFERENCES

1. Hepburn H. Delayed primary suture of wounds. *BMJ* 1919;1:181-3.
2. Bender J. Factors influencing outcome in delayed primary closure of contaminated abdominal wounds: A prospective analysis of 181 consecutive patients. *Am Surg* 2003;69:252-6.
3. Charalambous C, Zipitis CS, Keenan DJ. Outcome of primary chest packing and delayed sternal closure for intractable bleeding following heart surgery. *Cardiovasc J S Afr* 2002;13:231-4.
4. Foster L, Moore P. Acute surgical wound case 3: Fitting the dressing to the wound. *Br J Nurs* 1999;8:200-10.
5. Dinah F, Adhikari A. Gauze packing of open surgical wounds: Empirical or evidence-based practice? *Ann R Coll Surg Engl* 2006;88:33-6.