Novel treatment (new drug/intervention; established drug/procedure in new situation)

Localised fungal infection in a prosthetic mesh treated conservatively

Mehwash Nadeem, Hasnain Zafar, Muhammad Shahrux Effendi

Department of Surgery, Aga Khan University Hospital, Karachi, Sindh, Pakistan

Correspondence to Mehwash Nadeem, drmehwash7@gmail.com

Summary

Infection remains one of the most challenging complications of mesh hernioplasty. The authors report a case of a 28-year-old male with no known comorbidities who underwent reversal of ileostomy and prolene mesh hernioplasty. His wound was left open for delayed primary closure, although daily dressing started from second postoperative day. He developed fungal infection of prolene mesh on fifth postoperative day which was successfully treated with irrigation and daily wound dressing with amphotericin B avoiding the complications associated with mesh excision. He made an uneventful recovery and on last follow-up his wound was granulating well with no signs of infection.

BACKGROUND

Mesh hernioplasty is the preferred surgical procedure for large abdominal wall hernias.^{1 2} The rate of infection in polypropylene mesh is comparatively low but once infection develops, salvaging infected prosthetic mesh is rarely successful and most of them required mesh excision and complex ventral abdominal wall reconstruction with variable success rate.^{3 4} Fungal mesh infection has not been reported in literature yet. Use of topical antifungal (eg, amphotericin B) for irrigation in fungal mesh infection can be a preferred way of treatment in selected group of patients.

CASE PRESENTATION

A 28-year-old male presented with a history of exploratory laparotomy 3 years back due to gunshot where he was found to have colonic perforation. So perforation was primarily repaired and covering ileostomy was made. This surgery was done outside our centre and he turned up in our clinic for reversal of ileostomy. He also had incisional hernia as sign of delayed primary closure.

He underwent laparotomy, adhesiolysis and ileocolic anastomosis with left rectus advancement followed by prolene mesh application and the wound was left open considering the nature of surgery as clean-contaminated. He was initially kept nil per oral and later diet was progressed uneventfully. His daily dressings were started from second postoperative day and wound was found to be healthy. On fifth postoperative day mould-like growth was noted on multiple places over the mesh (figure 1). Considering the general status of patient, having no systemic signs, decision was made to treat it conservatively with local wound care although scrapping was sent for culture and he was discharged home.

INVESTIGATIONS

His complete blood count and serum glucose were normal and he did not have neutropenia at any point in time.

On third day of discharge he followed up in clinic, culture was finalised by that time showing heavy growth of *Aspergillus flavus*.

TREATMENT

Wound management using amphotericin B for irrigation as well as for wound packing was done for about 3 consecutive days in clinic. One ampoule of amphotericin B (50 mg) diluted in 1 litre normal saline was used for this purpose and only those areas were packed which showed obvious growth of fungus. He was kept on regular follow-up after every fourth day on advice of daily dressing in a similar fashion.

OUTCOME AND FOLLOW-UP

On follow-up after a month's time his wound was found to be granulating well (figure 2) with no overlying fungal growth and he had no systemic signs and symptoms. He is still on follow-up and planned for secondary closure of wound.

DISCUSSION

Rates of hernia recurrence following repair of abdominal wall hernia defects have been shown to be lower when prosthetic biomaterials are used, but their presence may be associated with a higher rate of infectious complications.^{5 6} Type of prosthetic material is one of the factors which determine the rate of wound infection and prolene being inert has low infection rate than other materials. Salvaging infected prosthetic material after ventral hernia repair is rarely successful. Most cases require mesh excision and complex abdominal wall reconstruction, with variable success rates. Traditional surgical teaching advocates removal of infected mesh, although the morbidity of these revisions is high.⁴

Paton *et al*⁷ reported conservative management of infected PTFE mesh by use of intravenous antibiotics, local wound debridement, vacuum-assisted closure and soft

Figure 1 Wound at the beginning of treatment. Showing heavy growth of mould.

Figure 2 Granulation over the mesh (no apparent fungal growth).

tissue coverage of the mesh. Trunzo *et al*⁴ managed infected mesh seroma with percutaneous drainage of seroma followed by gentamicin irrigation. He has reported two such cases; one grew methicillin resistant *Staphylococcus aureus* while the other grew *Klebsiella*, both treated with similar regimen. Aguilar *et al*⁸ has a similar series of three cases which were managed with long-term intravenous antibiotics, percutaneous drain placement and gentamicin irrigation through these drains. Both case series have concluded conservative approach as a successful alternate in carefully

selected patients. Fungal mesh infection is by far not reported in literature. Amphotericin B bladder irrigation is used frequently in clinical practice.⁹ Although its use is not standardised, there are multiple studies that attempt to show the impact on funguria management. Shirazi *et al*¹⁰ has reported the use of nasal amphotericin B irrigation in high concentration as a successful modality for treating chronic fungal rhinosinusitis. In our case, we have used amphotericin B for irrigation of infected mesh, which has not been described in literature yet.

We advocate conservative management of fungal mesh infection with local amphotericin B irrigation as a safe alternate in selected group of patients.

Learning points

- Conservative management of mesh infection is a safe alternative to complete excision of mesh in selected group of patients.
- For fungal mesh infection local wound care along with antifungal irrigation may be used as first-line therapy, provided patient has no systemic signs of infection.
- Patient should be kept on short interval follow-up until the wound heals completely.

Competing interests None.

Patient consent Obtained.

REFERENCES

1. **Stoppa RE**. The treatment of complicated groin and incisional hernias. *World J Surg* 1989;**13**:545–54.
2. **Utrera González A**, de la Portilla de Juan F, Carranza Albarrán G. Large incisional hernia repair using intraperitoneal placement of expanded polytetrafluoroethylene. *Am J Surg* 1999;**177**:291–3.
3. **Falagas ME**, Kasiakou SK. Mesh-related infections after hernia repair surgery. *Clin Microbiol Infect* 2005;**11**:3–8.
4. **Trunzo JA**, Ponsky JL, Jin J, *et al*. A novel approach for salvaging infected prosthetic mesh after ventral hernia repair. *Hernia* 2009;**13**:545–9.
5. **Jezupovs A**, Mihelsons M. The analysis of infection after polypropylene mesh repair of abdominal wall hernia. *World J Surg* 2006;**30**:2270–8; discussion 2279–80.
6. **Swenson BR**, Camp TR, Mulloy DP, *et al*. Antimicrobial-impregnated surgical incise drapes in the prevention of mesh infection after ventral hernia repair. *Surg Infect (Larchmt)* 2008;**9**:23–32.
7. **Paton BL**, Novitsky YW, Zerey M, *et al*. Management of infections of polytetrafluoroethylene-based mesh. *Surg Infect (Larchmt)* 2007;**8**:337–41.
8. **Aguilar B**, Chapital AB, Madura JA2nd. Conservative management of mesh-site infection in hernia repair. *J Laparoendosc Adv Surg Tech A* 2010;**20**:249–52.
9. **Drew RH**, Arthur RR, Perfect JR. Is it time to abandon the use of amphotericin B bladder irrigation? *Clin Infect Dis* 2005;**40**:1465–70.
10. **Shirazi MA**, Stankiewicz JA, Kammeyer P. Activity of nasal amphotericin B irrigation against fungal organisms in vitro. *Am J Rhinol* 2007;**21**:145–8.

This pdf has been created automatically from the final edited text and images.

Copyright 2011 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <http://group.bmj.com/group/rights-licensing/permissions>.
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Please cite this article as follows (you will need to access the article online to obtain the date of publication).

Nadeem M, Zafar H, Effendi MS. Localised fungal infection in a prosthetic mesh treated conservatively. *BMJ Case Reports* 2011;**10**:1136/bcr.07.2010.3177, date of publication

Become a Fellow of BMJ Case Reports today and you can:

- Submit as many cases as you like
- Enjoy fast sympathetic peer review and rapid publication of accepted articles
- Access all the published articles
- Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow