ORIGINAL RESEARCH PAPER

Volume-7 | Issue-6 | June-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

SURGICAL DISASTER OF MESH INFECTION

General Surgery

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ABSTRACT

Mesh Hernioplasty has become the gold standard treatment for hernia and mesh infection is a dreaded complication. We report a case of 62 years old male patient treated with mesh for incisional hernia who developed multiple discharging sinus from the operated site for past 6 months. Conservative management failed and patient was subjected to mesh explant and the above patient recovered well.

KEYWORDS

Mesh Infection, Mesh Explant

BACK GROUND

Mesh hernioplasty has become the gold standard treatment for all type of hernia. There are various types of meshes available with different qualities. No single types of mesh have all the desire qualities. The incidence of recurrence has come down but other complications like infection has evolved and if it occurs the mesh has to be removed in majority of cases.

CASE DETAILS

A 62 years old male presented with discharging sinus in the abdominal wall for the past 6 months. He has undergone surgery for intestinal obstruction 2 years back. Later he developed incisional hernia at the operated site for which mesh hernioplasty was done six months back.

After a month he developed a swellings in the anterior abdominal wall which later burst to form multiple sinus with fluid discharge (fig-1). He was conservatively managed with antibiotics and dressings. The persistent sinus was removed and sends for histopathological examination. It revealed no evidence of granulomatous lesion in the track. But the sinus still persists with discharge. On examination of abdominal wall there was multiple healed sinuses and single periumblical sinus with mesh exposed (fig-1).

A culture of the fluid revealed Proteus and Sensitive antibiotics were administered. Discharge got reduced but sinus persisted with the mesh exposed. Hence mesh explants (fig-2,3) was done and the patient recovered with no post-operative complication and he is under regular follow-up (fig-4)..

FIG-1

FIG- 2

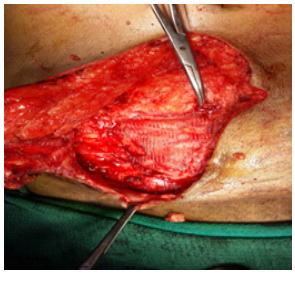

FIG- 3

FIG- 4

DISCUSSION

Multiple factors play a significant role in the development of mesh infection. None of material available till date can be described as ideal and the search for ideal material for mesh continues. Nature of material of the mesh is an important factor. PIFE meshes are associated with higher incidence of infection and fistula formation. Polypropylene or light weight meshes are less prone to develop infections, however multivitamin meshes such as polyesters lead to increase bacterial persistence or spread of infection as well.

Macro pore meshes are associated with low incidence of infection but higher incidence of erosive and adhesion events where as micro pore meshes are associated with high rates of infection as well as development of errors. Micro pore mesh has a pore diameter of less than 1mm so bacteria can penetrate the mesh easily, but leucocyte cannot as there mean size is 75 Micro Meyer. The result is that these bacteria are shielded from the immunological defence of the patient.

Knowledge of that pathophysiological of microbiological aspects of mesh infections is important for treatment.[1,2,4] Stapylococcus aureus is still the commonest organism. Other organisms are Streptococcus species, Enterobacteriaceae and Peptostreptococcus. Infection with atypical mycobacteria is encountered in Laparoscopic procedures.

Immunological defence mechanism in the host was significantly hampered by co morbid medical condition. The presence of a foreign material decreases the local immunity thereby decreasing the number of bacteria needed to cause infection.[6]

Bacteria get attached to the foreign material. They proliferate and form a biofilm all around the synthetic material. The bio film contains a wide spectrum of bacteria which release en exploit saccharide component. This component provides a productive effect for bacteria not only against a host defence mechanisms and exerts an excellent skeletal structure.

Most centres relay on high grade disinfection with glutaraldehyde after rinsing with ordinary portable water. The chance of water born organism causing infection also increases. This includes atypical mycobacterium and pseudomonas. The use of disinfection without meticulous bacteria contamination in this situation is another factor contributing mesh infection.

Clinical manifesting of mesh infection develops anywhere from 2 weeks to 14 months.[1] Clinical features typically suggestive of local inflammation are pain, redness, tenderness, swelling and raised local temperature. Systemic features may be fever associated with chills and malaise. In few cases mesh related infection may present as a fistulae discharging pus or an intra abdominal abscess as seen in Laparoscopic mesh infection. An accurate diagnosis has to be made with respect to the extent and severity of infection. Involvement of adjacent organs in close vicinity especially in abdominal cases needs to be determined. A contrast enhanced CT scan will identify the site of collection, extent of

the indurations, status of mesh and involvement of any adjacent organ system. A combined medical and surgical approach is the preferred strategy for management. Intravenous antibiotics are essential to begin with. However it may not lead to a complete cure as penetration of the capsule surrounding the mesh is difficult. Hence surgical approach is inevitable and mandatory.

CONCLUSION

For general surgeons mesh continues to be the biggest nightmare. Always early control of infections is warranted. Initially conservative management is advised but chronic infection requires mesh explant. Mesh hernioplasty is a tension free repair to the patients but in case of infected mesh its biggest tension to the surgeon.

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