Occlusion of a postoperative rectoabdominocutaneous fistula with fibrin clot: a case report.

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Abstract

A 56 year-old rectal cancer patient who developed a chronic rectoabdominocutaneous fistula postoperatively was treated with fibrin clot, and the fistula healed completely. Occlusion of chronic postoperative fistulas with fibrin clot appears to be a useful technique.

KEYWORDS: enterocutaneous fistula, fibrin clot

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Occlusion of a Postoperative Rectoabdominocutaneous Fistula with Fibrin Clot: A Case Report

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A 56 year-old rectal cancer patient who developed a chronic rectoabdominocutaneous fistula postoperatively was treated with fibrin clot, and the fistula healed completely. Occlusion of chronic postoperative fistulas with fibrin clot appears to be a useful technique.

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Fistulas that develop subsequent to surgical procedures often represent a serious problem (1-3). A technique of occluding chronic fistulas by excocleation and plugging with a fibrin clot has been reported (4-6). The goal is to keep the fistulous tract dry and occluded until healing occurs. Fibrin is precipitated locally in a wound. Initially, it acts as a temporary hemostatic barrier, and subsequently functions as a supporting framework for the growth of granulation tissue. We report a patient in whom fibrin adhesive was used to heal a longstanding rectoabdominocutaneous fistula.

Case Presentation

Low anterior resection of the rectum was performed in a 56 year-old-male patient on May 21, 1992. On the eleventh postoperative day, the discharge of feces from the intrapelvic penrose drain was noted. Barium enema was performed and revealed anastomotic leakage through the right lateral wall. A sump drain was inserted into the pelvic space and continuous washing was performed. Although adequate drainage and intravenous hyperalimentation were provided, the fistula persisted one month after the start of drainage. A diverting colostomy was recommended, but the patient refused to undergo this operation. Coaugulation factor XIII (Fibrogamin®) was then tried, but it failed to occlude the fistula. To completely outline the extent of the fistulous tract, fistulography was performed on August 21 (three months after the operation)(Fig. 1 a, b). The fistula was then washed out with isotonic saline using an infant feeding tube. A fibrin adhesive composed of 3 ml of Fluid A containing fibrinogen and 3 ml of Fluid B containing calcium, aprotinin and thrombin (Beriplast P®) was injected into the lumen of the fistula. The fistula subsequently closed completely without any complications that could be attributed to the technique or the implanted fibrin. A barium enema performed two weeks after the injection of fibrin adhesive revealed the complete occlusion of the enterocutaneous fistula (Fig. 2).

Discussion

The importance of diverting the contents of the involved organ for successful closure of a fistula was recognized by Sims (7). Subsequent methods described for fistula treatment, both conservative and operative, have always included some kind of diversion. However, no matter how meticulously performed, diversion rarely allows the fistula to be kept completely dry. The possibility of a fistula healing would be increased if the fistulous

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tract could be temporarily occluded, preferably by some reabsorbable material. It was with this fact in mind that the idea of plugging fistulas with fibrin came about.

Fibrin was used to meet two major needs. During the first phase of healing, the fibrin clot should act as a plug, allowing granulation tissue to form without interference from any kind of leakage through the fistula. Throughout this phase, the fibrin plug, therefore, needs to be resistant to fibrinolytic and nonspecific proteolysis. The second phase of healing begins after approximately one week. The fibrin plug should now be susceptible to lysis induced by the plasminogen activators released by the ingrowing granulation tissue. If not, it could become a hindrance to the growth of granulation tissue, instead of acting as a framework for the ingrowing capillary buds and fibroblasts (8, 9).

Use of fibrin clot should always be preceded by careful out-lining of the fistula, preferably by fistulography. The presence of a branching fistulous system is not an absolute contraindication. However, it is an advantage if the entire fistula can be excocchleated before fibrin deposition is performed. It is also imperative for the entire fistulous system to be filled with fibrin. Occlusion of the fistula with a fibrin clot is technically simple, and convenient for the patient, as it does not require any form of anesthesia, and can easily be repeated. Although the development of an abscess could be a problem, it did not occur in our patient and no side effects were noted.

The fibrin adhesive has several advantages over synthetic tissue adhesives, which are cytotoxic, nonabsorbable and cause delayed healing (10). The application of fibrin actually mimicks the first stages of normal wound healing, and it has a positive effect on tissue regeneration by stimulating fibroblast proliferation and collagen synthesis. Furthermore, bacterial growth is inhibited more by the fibrin adhesive than by a physiological blood clot. The fibrin seal disintegrates in 1 to 2 weeks and is fully absorbed. In conclusion, the fibrin adhesive method was effective for healing a longstanding enterocutaneous fistula.

References


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