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Case Report

Jejunum maltoma presented with perforation masked by dexamethazone abuse complicated by wound dehiscence managed with Ozone (O3) therapy

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ABSTRACT

Extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue (MALT lymphoma) is an extranodal lymphoma composed of morphologically heterogeneous small B-cells including marginal zone (centrocyte-like) cells in epithelial tissues. Case presented with perforation of Jejunum in 32 years female on dexamethazone misuse which block acute abdomen presentation. It is a unique tumor in that it originates from acquired MALT associated with chronic inflammation or autoimmune responses. Wound dehiscence and fistula of small intestine occurred due to effect of dexamethasone abuse, treated by ozone and fistula managed conservatively.

KEYWORDS: Jejunum maltoma, dexamethazone abuse, wound dehiscence, Ozone.

INTRODUCTION

Extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue (MALT lymphoma) is an extranodal lymphoma composed of morphologically heterogeneous small B-cells including marginal zone (centrocyte-like) cells in epithelial tissues, the neoplastic cells typically infiltrate the epithelium forming lymphoepithelial lesions.[1,2] MALT lymphoma is a unique tumor in that it originates from acquired MALT associated with chronic inflammation or autoimmune responses.[2] Gastrointestinal tract is the most common site for the development of extra nodal lymphoma.[3]

The small intestine represents the longest part of the digestive tract, making up 75% of the length (about 6 m long) and 90% of the absorptive surface area of the gastrointestinal tract. Malignant tumors of the small intestine are rare all over the world,[4] with a global incidence of less than 1.0 per 100000 population.[5] About 15%-20% of cancers of the small intestine are lymphomas with most occurring in the ileum and jejunum.[6,7] MALT lymphomas have an indolent natural course and are slow to disseminate. Recurrences that can occur after many years may involve other extranodal sites.[8]

CASE REPORT

32 year old female admitted to hospital (admitted on 8th of March & discharged on 30th of April) complaining of abdominal distention, discomfort, mild abdominal pain and constipation for 3 days duration. On examination pulse was 120 beats per minute, blood pressure was100/60, temperature was 37.8c, shiny skin mainly in face and hands, mild dyspnea, abdominal distention mild to moderate tenderness all over the abdomen. Laboratory examination revealed WBC count 8500, blood urea 85 mg per CC. Ultrasonic study revealed dilated loops of intestine filled with fluid and free fluid in peritoneum. CT scan confirmed the findings. In review of history patient was on dexamethazone (dexon) misuse.

Laparotomy done under cover of cefitriaxone, metronidazole and fluid correction. The findings was purulent fluid in all over the peritoneal cavity, dilated small intestine loops with adhesions (Figure 1), perforation in jejunum proximal to stricture in the loop (Figure 2) i.e. small intestine obstruction with perforation. Resection the site of obstruction and end to end anastomosis was done, lavage and of the peritoneal cavity. Folly's catheter removed after 24 hours, nasogastric tube removed after 72 hours, peritoneal cavity drain after 7 days of operation. Oral fluid diet was started on 5th post-operative day. Blood urea down to 50 mg/ cc on 4th post op. Day.

On 8th post op. day, signs of wound infection started to appear, on 10th post op. day wound dehiscence was happened. Wound reclosed and tension sutures fixed on 12th post.op. day. Small int. fistula was created or formed, the management was as follows: nothing by mouth, octreotide s.c., negative drainage of the wound, iv fluids with potassium replacement, skin protection with zinc oxide, antibiotics and frequent change of dressing.

Three days later wound dehiscence was happened again (Figure 3). Now we used the ozone for treatment of the

wound for 5 days for half an hour daily through tent of nylon over the wound. After that the wound was closed, the wound went well except a fistula at lower end of the wound. The fistula left to closed spontaneously after 33 days.

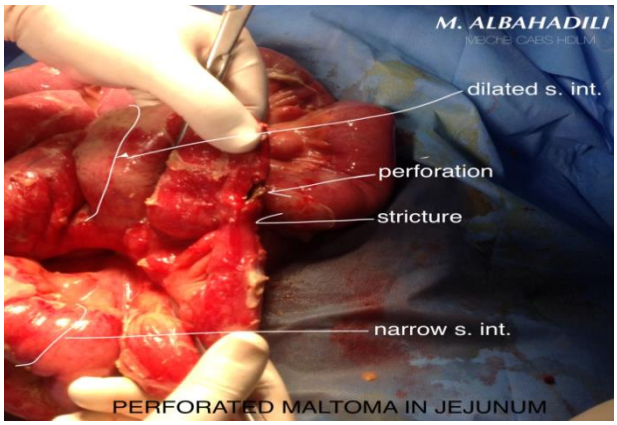

Figure 1: Perforation in Jejunum.

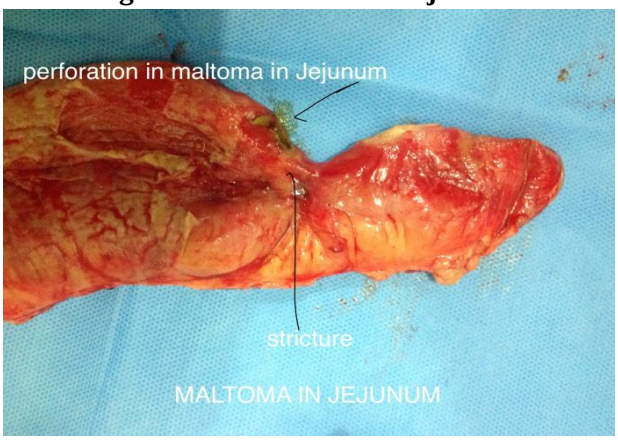

Figure 2: Resected segment of Jejunum.

Figure 3: Wound dehiscence.

DISCUSSION

Our case on a dexamethazone for a long period which was masking the signs and symptoms of perforation of maltoma lesion in jejunum. Dexamethasone is very potent anti-inflammatory glucocorticoid used in organ transplantation and skin allografts.[9] In our case a history of 3 days of abdominal distention other than acute abdomen and the laparotomy revealed perforation in jejunum proximal to obstruction which is a rare presentation of maltoma. Cancers of the small intestine are rare. They are comprised of 4 major histological types (adenocarcinomas, carcinoid tumors, lymphomas and sarcomas).[10] About 15%-20% of cancers of the small intestine are lymphomas with most occurring in the ileum and jejunum.[6,7] Incidence rates in the US are low at 0.54 in males and 0.26 in females per 100000 (age-adjusted) based on the SEER 1992-2006 data.[11] Small bowel lymphoma tends to be annular in the distal ileum, not proximal. Jejunum obstruction has been exceptionally described.[12] Present case is very rare occurrence. In our case, we observed repeated attacks of wound dehiscence of abdominal wall suture line and small intestine fistula because of dexamethazone effect which are known to suppress wound healing.[13] Dexamethasone treatments strongly interfere with both the synthesis and degradation of type I and type III collagen.[14] It is also a potent transcriptional inhibitor of human type VII collagen promoter activity in dermal fibroblasts, which leads to decreased anchoring of fibril formation.[15] A recent retrospective study reviewed the National Surgical Quality Improvement Program public use files from 2005 to 2008 to evaluate the adverse effects of preoperative corticosteroid use.[16] The authors found that of the 635,265 patients identified in the database, the 20,434 patients (3.2%) who were treated with chronic parenteral or oral corticosteroids for at least 30 days prior to surgery had a significant increase in rates of superficial and deep surgical site infections (from 2.9% to 5% and from 0.8% to 1.8%, respectively) with steroid use. They also reported a 2-3 fold increase in wound dehiscence and a 4 fold increase in mortality associated with pre-oper ative corticosteroid use.[16]

To overcome the healing problem we use ozone tent. Ozone (O3) is a triatomic molecule, consisting of three oxygen atoms.[17] It has many different applications in various fields; one of them is usage of ozone in medicine.[18] In 1958, Hansler presented his first medical ozone generator, which was capable of producing an ozone / oxygen mixture at therapeutically variable concentrations. There are several known actions of ozone on human body, such as immunostimulating and analgesic, antihypoxic and detoxicating, antimicrobial (bactericidal, viricidal, and fungicidal), bioenergetic and biosynthetic (activation of the metabolism of carbohydrates, proteins, lipids) etc.[19]

Ozone stimulates synthesis of biologically active substances such as interleukins, leukotrienes and prostaglandins. Ozone influences cellular and humoral immune system; it stimulates proliferation of immunocompetent cells and synthesis of immunoglobulins. It also activates function of macrophages and increases sensitivity of micro-organisms to phagocytosis.[20-23] O3 exposure is associated with activation of transcription factor NF-κ B; this is important to regulate inflammatory responses and

eventually the entire process of wound healing.[20,23-25] O3 might enhance acute cutaneous wound healing, and this could be associated with growth factors such as FGF, PDGF, TGF-β and VEGF. Ozonated oil has been used topically for the treatment of chronic wounds.[25] Contraindications of ozone therapy includes acute alcohol intoxication, recent myocardial infarction, haemorrhage from any organ, pregnancy, hyperthyroidism, thrombocytopenia and ozone allergy.[26]

OZONE GENERATION AND ADMINISTRATION

As a gas with a half-life of approximately one hour at room temperature, medical ozone generation and delivery systems require that ozone be created at the moment it is to be administered. Ozone, in this sense is not a drug that has a shelf life enabling it to be kept for long periods of time.

Importantly, the oxygen source must be of medical grade quality and thus devoid of nitrogen or other impurities. In the practice of external ozone application, a specially designed ozone-resistant envelope is used to enclose the area being treated. A precise fitting of the envelope is needed in order to ensure a constant ozone/oxygen concentration within the envelope milieu and a proper containment of the gas. Ozone will thus be prevented from escaping into the ambient environment, reducing respiratory exposure to treating personnel.

The ozone concentrations, duration, frequency of individual sessions and the lengths of the overall course of therapy prescribed during the course of treatment are all predicated upon the evolution of the specific medical condition under treatment. In extensive wet burns, for example, initial topical ozone concentrations will need to be low in order to prevent excessive systemic ozone absorption. On the other hand, in severely infected burns, ozone concentrations may require greater initial concentrations to repel bacterial growth. With progressive epithelialization of the burn wound, reduced ozone concentrations respect healing's delicate process.

FISTULA

For the fistula, we followed the conservative procedure of treatment, Recent evidences supports the fact that fistula output is a significant factor influencing closure of GI fistula, with the odds of spontaneous closure 3 times greater for low output fistulas (effluent<200ml/24h) than for high output fistulas (effluent > 200 ml/24 h).[27,28] Despite advances in metabolic and nutritional care, mortality rates still remain high.[29]

Recent improvements in term of reduced mortality associated to enterocutaneous fistula have resulted from a combination of factors, including advances in critical care, imaging techniques, nutritional support and antimicrobial therapy.[30,31] Recent prospective studies have failed to demonstrate a benefit in closure rate or outcome and question whether somatostatin produces a meaningful reduction in fistula output.[32, 33]

Drainage from entero-cutaneous fistulae is associated with severe inflammatory skin reactions such as maceration and erythema.[34, 35] The association between fistula output and closure rate is not as clear as that between output and mortality. However, a recent multivariate analysis of 188 patients by Campos et al.[36] revealed that patients with low output fistulas were three times more likely to undergo spontaneous closure than those with high-output fistulas. Quantification of fistula output allows more accurate management of the patient, and it may also provide prognostic information regarding mortality and likelihood of eventual surgical therapy.

CONCLUSION

Dexamethasone for a long period masks the signs and symptoms of perforation of maltoma lesion in jejunum. Dexamethasone is very potent anti-inflammatory glucocorticoid. Dexamethasone treatments strongly interfere with both the synthesis and degradation of type I and type III collagen, therefore wound dehiscence and fistula formation may occur that can be corrected by ozone (O3) therapy and the fistula heals by conservative tools.

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