Doi: 10.32677/IJCR.2015.v01.i03.002 **Case Report**

Tuberculous intestinal perforation in a case of Burkitt lymphoma on chemotherapy - A case report

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ABSTRACT

Intestinal perforation induced by chemotherapy in a patient of Burkitt lymphoma is a known potential complication which carries high mortality. Perforation may also occur as a result of the transmural nature of the tumour. Patients on chemotherapy are prone to contract infectious diseases due to a compromised immune system. Pulmonary tuberculosis has been reported in these patients, but abdominal tuberculosis has not. We report the case of a five year old boy on chemotherapy for Burkitt lymphoma, and who developed a tuberculous jejunal perforation. The patient underwent drain insertion and stabilization followed by exploratory laparotomy with resection of the pathological segment and closure of the duodenal stump at the fourth part. Bowel continuity was re-established by gastrojejunostomy. Histopathologic examination of the resected segment revealed intestinal tuberculosis. Anti -tubercular therapy was started and continued for nine months. The last cycle of chemotherapy was administered 1 month after surgery. At 1 year of follow up the patient is asymptomatic and thriving well.

Key words: *Burkitt lymphoma, Bowel Perforation, Intestinal Tuberculosis*

Burkitt Lymphoma is one of the most rapidly growing human malignancies and often affects the abdomen in paediatric patients [1,2]. Intestinal perforation due to the rapid growth and necrosis of the tumour as well as due to chemotherapy is a known complication of this disease and carries high mortality. The disease also results in an immunocompromised state; hence, opportunistic infections and pulmonary tuberculosis are known to occur in these patients [3].

We present the case of a child with Burkitt lymphoma who developed a tuberculous intestinal perforation, and survived therapy. On review of literature, we did not find any report of primary abdominal tuberculosis leading to perforation in a case of Burkitt lymphoma.

CASE REPORT

A 5 year old boy, a diagnosed case of Burkitt Lymphoma of the intestine undergoing chemotherapy (3cycles had been given) was admitted to the medical oncology unit of our hospital for his fourth cycle of the cyclophosphomide, hydroxydaunorubicin, methotrexate and prednisolone (CHOP) regimen with recombinant granulocyte colony stimulating factor. On the fifth day following completion of the cycle, he developed severe pain in the abdomen, fever, abdominal distension, and one episode of malaena.

On examination, he was found to have significant tachycardia with hypotension requiring dopamine and dobutamine vasopressor support. The abdomen was distended, tense and tender. Per rectal examination revealed formed stool. His blood investigations showed a

relatively normal haemogram (Hb 13g/dl, TLC 16,000/mm^3, platelets 490,000/mm^3) with hypoproteinemia (proteins 4.4g/dl; albumin 2.7 g/dl). A bedside x-ray of the abdomen showed dilated bowel loops with features of obstruction, but features of free gas under the diaphragm were absent (Fig. 1). Ultrasonography of abdomen revealed free fluid in the hepatorenal pouch with internal echoes suggesting the presence of pus.

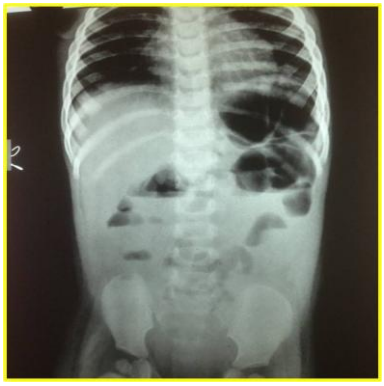

Figure 1: The erect abdominal radiograph showing multiple air-fluid levels but no free air

In view of the patient's unstable hemodynamic condition, a decision was taken to drain the collection by ultrasound guided pigtail catheter insertion into the peritoneal cavity rather than immediate exploration. Following drainage of the intraperitoneal pus, the patient's general condition improved significantly over the next three days. Once haemodynamically stable, a CT scan of the abdomen was obtained which showed gross pneumoperitoneum with an intraperitoneal collection (Fig. 2). Contrast leak into this collection was evident, suggesting bowel perforation somewhere in the proximal small intestine.

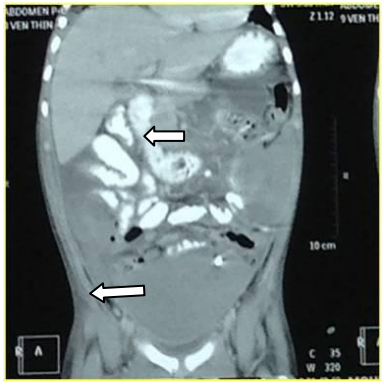

Figure 2:The CT scan showing a large intraperitoneal collection and pneumoperitoneum.

Immediate abdominal exploration was then performed. Approximately 200ml of pus was drained from the peritoneal cavity. There were dense adhesions between the small bowel loops along with enlarged mesenteric lymph nodes. A 1x1 cm perforation was identified in the jejunum, 10cm from the duodenojejunal flexure, along the antimesenteric border. The adjacent segment of small bowel, approximately 10cm in length appeared oedematous and diseased. We performed a resection of the perforated bowel including a 10 cm segment of jejunum with closure of the duodenal stump and side to side gastrojejunostomy as shown in Fig 3. A thorough peritoneal lavage was given. Drains were placed adjacent to the anastomosis and in the pelvis.

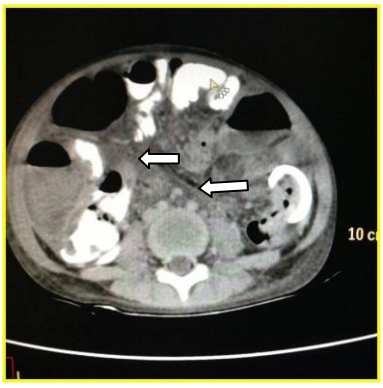

Figure 3:The pigtail catheter in situ with contrast leak into the peritoneal collection

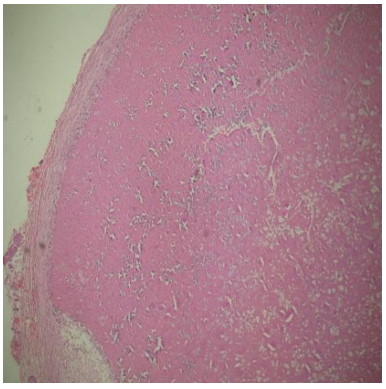

Figure 4: Caseation seen on histopathology of the resected specimen

Post operatively, the patient required ventilator support for 24 hours. We removed the nasogastric tube and initiated oral feeds on day7. The drains were removed on day8 and day11 respectively. No chemotherapy was given in the immediate post op period. The resected segment of

jejunum was sent for histopathological analysis. This revealed ulceration of the mucosa, caseous necrosis, epitheloid cells in the sub mucosa and tuberculous inflammation. A single lymph node in the serosa showed extensive caseation, suggesting tuberculosis (Fig. 4). The patient was started on Antitubercular therapy (ATT) Category 1. The next cycle of chemotherapy was administered one month after surgery. He received category 1 ATT for 9 months. At 1 year of follow up the patient is asymptomatic and thriving well.

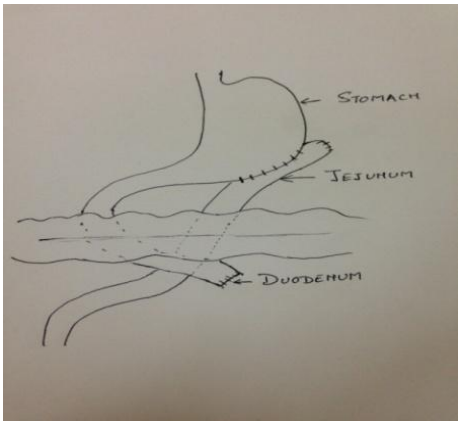

Figure 5: A Line diagram representing the surgical reconstruction performed

DISCUSSION

Pulmonary Koch's in cases of Burkitt lymphoma is known but primary intestinal tuberculosis with Burkitt lymphoma has not been reported. Bowel perforations following chemotherapy for Burkitt lymphoma have been described previously [1,2,4,5,6]. Complications such as perforations and bleeding occur owing to the extreme chemo sensitivity of these tumours as well as their transmural nature. These complications are associated with a high mortality. There are limited case series of perforations in children. Meyers et al reported a series of 6 cases of bowel perforation after induction therapy for childhood non-Hodgkin lymphoma. Only 2 of these children survived [4]. 2 "perforations" were of anastomotic leaks following bowel resection during staging laparotomy. One death was subsequent to a perforation from ulcerative necrosis of an unresectable lymphoma. In the remaining 3 patients, aetiology of the perforation remains unclear. None of the 6 children had clinically detectable mural disease of the bowel.

Rivera-Luna et al reported a series of 9 children with intra-abdominal non-Hodgkin lymphoma with perforation at the site of primary disease after chemotherapy; however, children with Burkitt lymphoma were excluded from this study [5]. Only one child survived, which they attribute to a 50% reduction in cyclophosphamide dose and peripheral hyperalimentation. Goldberg et al reported the case of a 5yr old child who survived jejunal perforation after chemotherapy for stage3 Burkitt lymphoma [1]. They resected a total of 58 cm of intestine and its mesentery including the perforation and all gross lymphoma. Chemotherapy was continued postoperatively despite development of intra-abdominal abscesses. Peripheral hyperalimentation was used to enhance nutritional support.

Perforation occurs in tuberculosis of the intestines secondary to ulceration. Stricture- perforations are also known to occur where the bowel proximal to an obstructing stricture gives way. We performed a short segment resection in our patient. No chemotherapy was scheduled in the immediate post-operative period. This patient presented the challenge of treating two pathologies simultaneously. The operative reconstruction that was performed for this patient has not been commonly used. However, since the adjacent bowel was too oedematous for an anatomical reconstruction, and a high output fistula would not have been withstood, a gastrojejunostomy with a cul-de-sac closure of the duodenal stump was the most feasible surgical reconstruction in the given situation. Despite two pathologies of the bowel, viz., Burkitt lymphoma and tuberculosis, both of which are associated with high mortality and morbidity, this patient survived therapy.

CONCLUSION

Bowel perforation in Burkitt lymphoma is a known complication that carries a high risk of mortality and morbidity. Chemotherapy and tumour breakdown are known causes of bowel perforation in these patients. This is the first case report of Primary abdominal tuberculosis with perforation in a case of Burkitt lymphoma in a paediatric patient.

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