Small bowel intussusception secondary from intraluminal high grade epithelioid cell carcinoma of unknown origin with concurrent metastatic renal cell cancer

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ABSTRACT

Intussusception is an unusual cause of intestinal obstruction especially in adult populations. Malignant lesion accounts for approximately 30–35% of small bowel intussusception in the adult population. We presented here a rare clinical case of a 66-year-old demented male with small bowel intussusception from intraluminal tumor of unknown origin with concurrent metastatic renal cell carcinoma.

Keywords: High grade epithelioid carcinoma, Intraluminal tumor, Intussusception, Metastatic renal cell carcinoma

INTRODUCTION

Intussusception is an unusual cause of intestinal obstruction, in which accounts for approximately 1–5% of bowel obstructions. Intussusception is rare in the adult population, which carries about 5% of all cases of intussusceptions [1, 2]. Among of all adult intussusceptions, malignant lesion accounts for approximately 30–35% of small bowel intussusception [2, 3]. The pathophysiology of intussusception secondary to tumor (either intraluminal or extraluminal lesion) is associated with alteration of the normal peristaltic activity caused by lesions serving as a lead point [2]. We here presented a rare clinical case of a 66 years old demented male with small bowel intussusception from histologically-demonstrated intraluminal tumor of unknown origin, with concurrent radiologically-proven renal cell carcinoma.

CASE REPORT

A 66-year-old cachectic male with history of dementia was initially brought in to emergency department with nausea and vomiting and abdomen distension. His past medical history included Korsakoff dementia secondary to alcohol abuse, malnutrition, vitamin D deficiency and iron deficiency. Initially, he was admitted under the medical team as gastroenteritis. His blood test result revealed that he had normal electrolyte balance with potassium of 4.8 (3.5–5.2 mmol/L), sodium of 135 (135–145 mmol/L), Chloride of 95 (95–110 mmol/L); normal kidney function with creatinine of 78 (64–108 umol/L) and eGFR of 89 (>60 ml/min/1.73 m²); haemoglobin of 119 (135–180g/L); and white cell count of 14.9 (4.0–11.0x10^9/L). His urine is
clear with 10 leukocytes, 10 erythrocytes and 10 epithelial cells, suggesting no sign of urinary infection. As symptoms progressed, a CT abdomen/pelvis was conducted which demonstrated small bowel intussusception at left hemi-abdomen with the impression of a mass within the lead point (Figure 1). There was also an incidental finding suggestive of right renal cell carcinoma invading the right renal vein and probable right adrenal and right lower lobe pulmonary nodule metastasis (Figure 2). During admission, the patient had spontaneously resolved his intussusception and was discharged back to care facility with plan of outpatient follow up. Patient returned to the emergency department a few days later with worsening of symptoms. Repeated CT abdomen/pelvis again revealed recurrent intussusception in the right iliac fossa. He was admitted under general surgery and a nasogastric tube and in dwelling urinary catheter were inserted. His bowel obstruction had intermittently resolved and reoccurred. Decision of palliative intention surgery was discussed with his next of kin for the purpose of resolving his acute surgical problem. Optimisation of his cachectic status was planned prior to his surgery (pre-operative albumin of 27 g/L). Total parenteral nutrition was initiated with daily electrolyte check to avoid refeeding syndrome. His operation occurred on the nineteenth day of his second admission.

Laparoscopy was initially conducted and mid small bowel intussusception with dilated proximal bowel and collapsed distal bowel was identified. It was deemed to be high risk to reduce intussusception laparoscopically. Therefore, small right sided Lanz incision was made to deliver small bowel. A large palpable mass was found at the proximal side of intussusception (Figure 3A and B). A longitudinal enterotomy was made and a 60x38x40 mm intra-luminal polypoid and lobular tumor was resected by pedunculated stapled approach (Figure 4). A limited resection of small bowel where tumor was attached was performed. The primary anastomosis as functional end-to-end was conducted with PROXIMATE linear cutters.
(TLC) 75 mm stapler and oversewn with 3–0 PDS. Distal enterotomy was closed transversely with 3–0 PDS. Small bowel was then carefully examined again via laparoscopy approach. No mesenteric deposits or other deposits of tumor were noted.

He was closely observed in intensive care unit one day post-operation. He recovered uneventfully from the surgery. However, he had a prolonged hospital admission with urinary tract infection and slow recovery. During admission, a CT abdomen/pelvis was repeated 2 weeks post-surgery for ongoing abdominal pain. It was found that the metastatic lesion at the right lung base has significantly increased in size from 1.5 to 4.2 cm in 1 month, and there was also enlargement of his right renal mass.

Post-operative histology of the intraluminal tumor was unfortunately non-specific. The histology testing demonstrated that the tumor is high grade epithelioid malignancy of unknown origin. Its morphological features are not typical of a renal cell carcinoma or a primary small intestinal adenocarcinoma. Further immunohistochemistry had been performed.

The neoplastic cells stain with SALL4 (typically positive in germ cell tumors), CDX2 (focally positive in carcinoma of colorectal origin), cytokeratin markers AE1/AE3 and CK8/18, markers for CK7, CK20, Si1oom, PAX8, GATA3, Hep Par1, TTF1, CD34, chromogranin, synaptophysin, MUM1, inhibin, desmin, and Melan-A were all negative. All negative immunohistochemistry results have left the diagnosis of tumor’s origin undetermined.

His case was discussed in colorectal multidisciplinary team meeting. As there was no definitive diagnosis of metastatic renal cell carcinoma, we were unable to offer palliative chemotherapy. Given his interval progression of metastatic cancer and poor prognosis, palliative approach with possible palliative radiation therapy was offered with agreement of patient’s next of kin. Patient was subsequently discharged from hospital back to care facility on day 36 of his admission.

DISCUSSION

Intussusception in adults is a rare cause of intestinal obstruction. It is often difficult to diagnose as it has diverse presentations and varied symptoms. Radiological studies had been found to be useful in preoperative diagnosis, including abdominal ultrasound, plain abdominal films, upper gastrointestinal contrast series, barium enema or CT abdomen/pelvis. Abdominal CT has been considered as the most useful tool to diagnose intussusception with a reported accuracy of 58–100% [4].

It is extremely rare that intussusception is caused by intraluminal tumor. It was noted that small bowel tumors are more common from secondary cancer than primary and they occur equally in jejunum and ileum [5]. Melanomas are the most common form of cancer to metastasise to the small bowel. There is an incidence of 2–5% of small bowel metastatic melanoma deposit in patients with malignant melanoma of the skin [6]. Renal cell carcinomas constitute 7.1% of cancers that metastasize to the small intestine. Other forms of cancer that commonly metastasize to the small intestine include lung, cancers of the head and neck, breast, and oesophagus [2]. Intraluminal metastases usually presented with gastrointestinal bleeding due to tumor invasion to intestinal vessels, and some may present with obstructive symptoms or perforation [5, 7–9].

In our case, the exact primary of intraluminal carcinoma was unable to be identified. This has complicated the diagnostic dilemma and delayed potential treatment as immunohistochemistry tests required a long time for results.

Few potential origins of his small bowel tumor were proposed. Firstly, his radiological proven primary right renal cancer metastasized to small bowel, right adrenal and right chest. Secondly, primary lung cancer metastasized to small bowel, right kidney, right adrenal and right chest. Thirdly, small bowel tumor is the primary cancer which metastasis to right kidney, right adrenal and right chest. Finally, there were synchronous primary tumors.

These theories had all been shown by previous case reports. Numerous case reports had demonstrated renal cell carcinoma can metastasize to small bowel causing intussusceptions [1–3, 5, 7].

Dilege et al. [8] had published a case report of an adult intestine intussusception from epithelioid type mesenchymal tumor (gastrointestinal stromal tumors, also known as GISTs) as primary tumor of the small intestine. GISTs are a heterogeneous groups of mesenchymal tumors which arise from the gastrointestinal tract. The small intestine is the second most common site of GISTs. Guner et al. [10] also had published a case report to demonstrate metastasized sarcomatoid carcinoma of the lung to cause intestinal obstruction. However, none of these immunohistochemistry results were consistent with our histology report.

Based on the clinical picture, the idea of metastatic primary renal carcinoma metastasize to small bowel is more favorable. Unfortunately, no formal pathological diagnose of RCC was able to be performed as patient and his family declined kidney biopsy when palliation treatment was offered.

It was recommended that the mainstay of this condition is surgical resection of lesions to reduce intussusceptions as it not only gives symptoms relief but also potentially improves survival benefit [2, 5].

CONCLUSION

Intussusception caused by intraluminal polyloid small bowel tumor from metastatic cancer is extremely rare. The exact pathophysiological of intraluminal polyloid tumor from metastatic cancer is uncertain. Surgical
intervention of complete excision is recommended by authors not only for palliative symptoms relief but also potentially survival benefit.

REFERENCES


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Consent Statement

Written informed consent was obtained from the patient for publication of this case report.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

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