Hematochezia due to small bowel lesions – 3 rare cases.

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Abstract –

Small bowel lesions are important differentials in patients presenting with hematochezia and these three cases highlight the difficulty of diagnosis of these lesions. All of these patients present with fresh per rectal bleeding with variable degrees of hemorrhagic shock with no or minimal preceding symptoms like abdominal pain. Imaging was beneficial in accurately localizing the lesion in 1st patient and histologically gastrointestinal stromal tumour was diagnosed. 2nd case illustrates the limitations of conventional endoscopy and unavoidable delays in decision making that can happen with small bowel lesions in a patient found to have rare jejunal diverticula. 3rd case is on a patient with possible vascular lesion in the small bowel noted in initial CT angiography and subsequently failed to localize the lesion at laparotomy indicating that imaging findings may not always mirror with possible well define lesions.

Key words – Hematochezia, Gastrointestinal stromal tumour, Jejunal diverticula, small bowel vascular lesions.

Introduction –

Hematochezia is a surgical emergency with high morbidity and mortality and often it is difficult to diagnose the cause of it. This case series is on patients presented with hematochezia over a period of one year to a single surgical ward in National Hospital of Sri Lanka with emphasis on three patients with rare small bowel lesions identified as the cause of bleeding. Overall, 11 patients presented with hematochezia during October 2019 to September 2020. Of these patients 7 patients had colonic causes, 3 patients had small bowel causes and 1 patient had a duodenal ulcer.

Case 1 -

49 year old previously healthy female patient admitted to surgical casualty ward with passage of fresh blood per rectum since the morning. She had noted passage of black colour stools over the past three days. There was no associated abdominal pain, tenesmus or anal lumps. She was pale, pulse rate was 106bpm and her blood pressure was 100/70mmHg. Proctoscopy revealed altered blood and fresh blood clots. The patient was resuscitated with blood and blood product transfusion and hemodynamic parameters remained stable afterwards. She underwent urgent CECT abdomen and CT angiogram which revealed 3.5cm x 3.1cm highly contrast enhancing lesion in the ileal mesentery. A proximal ileal tumour was identified [Fig 1] in the laparotomy and segmental small bowel resection was carried out. The patient had an uneventful postoperative recovery. Histology revealed gastrointestinal stromal tumour [CD 117 positive] of 3.4cm diameter and mitotic index was <5. The tumour was categorized to be “low risk” in the modified Fletcher classification; she was provided with adjuvant tyrosine kinase inhibitor [imatinib] treatment following oncology consultation.



Fig 1: Cut open specimen of small bowel with the tumour.

Case 2 – 65y old female patient with diabetes and chronic kidney disease presented with acute hematochezia of 4 hours duration and a preceding history of upper abdominal pain over past 2 days which was treated as peptic ulcer disease with over the counter drugs. On admission patient was semiconscious [GCS13/15], pale and had a low volume pulse of 120bpm, blood pressure of 80/50mmHg. Abdominal signs were not elicited reliably since the patient was restless and confused. O negative blood was used for initial resuscitation and subsequently cross match blood was given with implementation of the massive transfusion protocol. After resuscitation, she underwent gastroduodenoscopy which revealed no abnormality. Colonoscopy was attempted and was not successful due to significant bleeding. The patient deteriorated again after the initial response to hemostatic resuscitation. Since angiography was not available patient underwent emergency laparotomy with intension of total colectomy if the small bowel was free of blood. However 15cm segment of jejunum with multiple diverticula was identified with no apparent blood proximal to the lesion [Fig 2]. There were no colonic diverticula. She underwent segmental small bowel resection and bleeding stopped after the surgery. However on the 2nd day of surgery patient succumbed due to multi organ failure as a result of cumulative effects of surgery and massive blood transfusion.

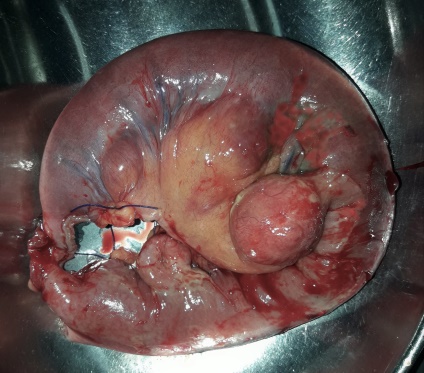


Fig 2: Resected segment of jejunum with multiple diverticula in the mesenteric border [Arrow].

Case 3 – 45 year female patient was transferred from a district hospital with a history of acute fresh per rectal bleeding of one day duration. The patient did not have any preceding bowel symptoms and there was no abdominal pain. She was pale, pulse rate was 90bpm and blood pressure was 100/60mmHg. Her abdominal examination was unremarkable. Digital rectal examination and proctoscopy only revealed altered blood, which was coming above the rectum. Upper GI endoscopy was normal and colonoscopy showed altered blood proximal to the ileocaecal valve. CECT and mesenteric angiogram done at the district hospital showed distal jejunal enhancing lesion suggestive of a vascular tumour. She underwent laparotomy and on gross examination tumour was not identifiable externally and no resection was performed. Subsequently, she underwent repeat mesenteric angiography which was normal. Per rectal bleeding gradually subsided and stopped after 3 days of admission. Video capsular endoscopy [VCE] was done 1 week later and failed to identify any abnormality. She was followed with haemoglobin levels and stool occult blood to identify any occult bleeding.

**Discussion –**

Hematochezia is a challenging clinical scenario with high morbidity and mortality. There can be gastro duodenal causes, small bowel causes and colonic causes for the bleeding making it difficult to diagnose, particularly as quickly the clinical requirement is. Small bowel bleeding is defined as bleeding distal to ampulla of Vater and proximal to the ileocaecal valve and accounts for 5 -10% of gastrointestinal bleeding events 1, 2. This part of the bowel is not accessible with conventional endoscopy. Melena is found to be the commonest presentation of bleeding from small bowel lesions accounting for around 2/3 of cases and 1/3 of patients will present with hematochezia 3.

Causes of small bowel bleeding are diverse and some are extremely rare. Angiodysplasia is identified as the most common cause in many studies, particularly among the old patients 4. Telangiectasias, Dieulafoy’s lesion and arteriovenous malformation are other less commonly encountered vascular lesions. Tumours in patients older than 40y and Inflammatory bowel disease in patients younger than 40y is noted in many case series as next common etiologies 3,4. The Meckel’s diverticulum, aorto-enteric fistula, Jejuno-ileal diverticula are much rarer entities3,4.

CT angiography will detect a bleeding of 0.5ml/min or more with a sensitivity of 89% and a specificity of 85%1. Red cell scintigraphy can detect a bleeding of 0.1ml/min1; however it will not identify an accurate location of bleeding and does not have the therapeutic aspect of angiography. Imaging was beneficial in the 1st case; however, in the last two cases it failed to give clinically useful information. Video capsular endoscopy has an important role in suspected small bowel bleeding and sensitivity of 87% was observed in a case series when performed within initial 48h of the acute bleeding 2. VCE performed within two weeks is shown to be having best diagnostic yield of 91% compared to as low as 32% afterwards 2. Other than the timing of the procedure, rapidity of bleeding, multiple episodes of bleeding, bleeding for more than 6months and Hb<10g/dl are identified as predictors of higher chance in finding an abnormality in VCE 2. Repeating VCE or balloon enteroscopy is suggested by many authors as the next resort when a site of bleeding is not identified 2, 4. We decided to follow up the 3rd patient without further invasive evaluation considering fact 2nd angiogram was normal and laparotomy did not reveal any macroscopic abnormality.

Tumours of the small bowel are the second most common cause of bleeding, accounting for approximately 10% of cases 4. It is observed that the benign tumour is 5 times more likely to present with bleeding than a malignant tumour 3, 4. Gastrointestinal stromal tumour (GIST) is a rare type of tumour which has an incidence of 1 case per 100000 per year 5. These are tumours arising from the interstitial cells of Cajal resulting from a mutation in either the tyrosine kinase receptor proto oncogene [KIT] or platelet derived growth factor receptor alpha [PDGFRA] proto oncogene or both of them 5. Stomach accounts for half of the cases and small bowel is the 2nd commonest site where 1/3 of the GIST are identified 4, 6. Similar to case 1, overt GI bleeding in the form of hematochezia or melena is a common presentation of small bowel GIST which is noted in 1/3 to sometimes up to 50% of cases 7, 8. Nonspecific abdominal pain, bowel obstruction due to intussusception, symptomatic liver metastasis and abdominal mass are other reported presentations 7, 8. Apart from a spindle type tumour morphology identified in the histology, Immunohistochemistry play a key role in diagnosis of GIST. KIT [CD 117] positivity which is noted in 95% of cases or positivity for CD 34, DOG1 is important for the confirmation of diagnosis 5, 6, 7. Rare types with negative immune studies will need genetic assay to identify the key genetic mutation in the KIT and PDGFRA 5. This patient had CD 117 [KIT] positive tumour.

Main curative option is complete surgical excision to achieve an R0 resection margin 5, 6. Lymph node metastasis is rare and nodal dissection is not recommended unless clinically suspected nodes are present 6. Adjuvant therapy with tyrosine kinase inhibitors [Imatinib] is recommended based on risk stratification where the size of the tumour, site of the tumour, mitotic index and tumour perforation are the main factors taken into consideration 5, 6. Accordingly a GIST can be classified as very low, low risk, intermediate risk and high risk of malignant potential with higher risk features favour more chances of local recurrence and systemic metastatic disease [modified Fletcher classification] 5,6. 1st patient was considered to be in the low risk category since the tumour was 3.4cm [2 -5cm] and mitotic count was less than 5%. Considering site and age of the patient multidisciplinary opinion was to treat with adjuvant imatinib for 3y.

Diverticula in the small bowel are a rare cause of hematochezia 3, 4, 9, 10, 11. Meckel diverticulum is reported as the commonest small bowel diverticulum and other congenital diverticula are uncommon 9. Similar to what is seen in the colon, the rest of the diverticula of jejunum and ileum are acquired pseudo diverticula which does not have a muscularis propria and located in the mesenteric border 11. However, in contrast to colonic diverticula, small bowel diverticula are rare and in the same time less percentage of patients develop complications 9, 10, 11. Mal-absorption due to bacterial overgrowth, diverticulitis, perforation and bleeding are the main concerns 9, 10, 11. Few cases of jejunal diverticula presenting with hematochezia is reported in the literature and accurate pre-operative diagnosis may not be possible always similar to case 2, particularly if the patient is haemodynamically unstable, where emergency laparotomy may be the only option 9, 10, 11. Colon is the common site of bleeding in the elderly where subtotal colectomy is considered the standard of care in many guidelines. However, small bowel should be inspected carefully to exclude bleeding due to diverticula as illustrated in this case. Coexisting colonic diverticula is seen in more than 50% of patients with small bowel diverticula and/or continuous small bowel diverticula can complicate intra operative decision making 11. Intra operative endoscopy is suggested in view of avoiding unnecessary colectomy in these circumstances 11.

Conclusion –

Small bowel lesions are rare and difficult to diagnose. They can present with massive lower gastrointestinal bleeding, which carries significant morbidity and mortality, particularly with delay in diagnosis. Advance imaging and endoscopic facilities are needed to diagnose these lesions; however, some cases can still be undiagnosed.

Acknowledgements –

There are no conflicts of interest to declare.

References -

1. B. Murphy, D. C. Winter and D. O. Kavanagh; Small Bowel Gastrointestinal Bleeding Diagnosis and Management—A Narrative Review; Frontiers in Surgery, May 2019 | Volume 6, doi: 10.3389/fsurg.2019.00025.
2. Lauren B. Gerson, Jeff L. Fidler, David R. Cave and Jonathan A. Leighton; ACG Clinical Guideline: Diagnosis and Management of Small Bowel Bleeding; American J Gastroenterol 2015; 110:1265–1287; doi: 10.1038/ajg.2015.246; published online 25 August 2015.
3. Cong Long Nguyen, Khac Khiem Pham, Canh Hiep Nguyen, Hoang Nam Nguyen, Tran Tien Dao, Hoai Nam Nguyen, Phuong Nguyen, Van Tuyen Pham, Tuan Thanh Nguyen and Truong Khanh Vu; Causes and Clinical Characteristics of Small Bowel Bleeding in Northern Vietnam; Canadian Journal of Gastroenterology and Hepatology Volume 2020, Article ID 8884092, 7 pages [doi.org/10.1155/2020/8884092](https://doi.org/10.1155/2020/8884092).
4. Deepak Gunjan, Vishal Sharma, Surinder S Rana and Deepak K Bhasin; Small bowel bleeding: a comprehensive review; Gastroenterology Report 2 (2014) 262–275, doi:10.1093/gastro/gou025 Advance access publication 29 May 2014.
5. P. G. Casali; Gastrointestinal stromal tumours: ESMO–EURACAN Clinical Practice Guidelines for diagnosis, treatment and follow-up; Annals of Oncology 29 (Supplement 4): iv68–iv78, 2018 doi:10.1093/annonc/mdy095 Published online 28 May 2018; updated 04 October 2018.
6. Kazuya Akahoshi, Masafumi Oya, Tadashi Koga, Yuki Shiratsuchi; Current clinical management of gastrointestinal stromal tumor; World J Gastroenterol 2018 July 14; 24(26): 2806-2817, DOI: 10.3748/wjg.v24.i26.2806.
7. Ruth E. Sankey\*, Mohamed Maatouk, Arshad Mahmood, and Mazhar Raja; Case Report: Jejunal gastrointestinal stromal tumour, a rare tumour, with a challenging diagnosis and a successful treatment; Journal of Surgical Case Reports, 2015 , 1–3, doi: 10.1093/jscr/rjv050.
8. Cicilia Marcella, Rui Hua Shi and Shakeel Sarwar; Clinical Overview of GIST and Its Latest Management by Endoscopic Resection in Upper GI: A Literature Review; Gastroenterology Research and Practice Volume 2018, Article ID 6864256, doi.org/10.1155/2018/6864256.
9. Lifang Zhao, Wei Lua, Yinping Sunb, Junrong Liang, Shanshan Feng, Yongquan Shi, Qiong Wu, Jianhong Wang, Kaichun Wu; Small intestinal diverticulum with bleeding Case report and literature review; Medicine (2018) 97:9(e9871) doi.org/10.1097/MD.0000000000009871.
10. Ayokunle T. Abegunde, Emily Christman, Lewis A. Hassell and Donald Kastens; Rare Jejunal Diverticular Bleeding; ACG Case Rep J 2016;3(4):e146. doi:10.14309/crj.2016.119.
11. Sheraz Yaqub, Birte V Evensen and Kristin Kjellevold; Massive rectal bleeding from acquired jejunal diverticula; World Journal of Emergency Surgery 2011, 6:17 http://www.wjes.org/content/6/1/17