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DUODENAL LEIOMYOMA AS A RARE CAUSE OF GASTROINTESTINAL BLEEDING IN A NIGERIAN- CASE REPORT WITH PRESENTATION OF MINIMALLY INVASIVE THERAPEUTIC INTERVENTION

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ABSTRACT

Findings from Nigerian pathological series have supported international reports about the rarity of the occurrence of duodenal leiomyomas. More recently, case reports from the country have detailed interventional radiological techniques being deployed successfully in the control of massive bleeding from the gastrointestinal system. The article seeks to document these rare elements coming together in a Lagos, Nigeria-based center in the case of bleeding duodenal leiomyoma in an elderly gentleman which was successfully controlled by selective transcatheter arterial embolization.

INTRODUCTION

Leiomyomas are the commonest benign mesenchymal tumors of the gastrointestinal tract (GIT). They are widely distributed along this tract, with the stomach being the commonest site of occurrence.[1] Nigerian immunohistochemistry-based series have corroborated world reports that duodenal leiomyomas (DL) are a rare finding indeed.[2-4] Also, recent scientific literature has heralded the successful deployment of minimally invasive vascular embolization techniques in the control of GIT bleeding in Nigerian patients.[5,6] This report documents a recherché DL as the cause of GIT bleeding in our locality for the first time and highlights apposite clinical, diagnostic, and therapeutic aspects.

CASE REPORT

A 75-year-old man presented at the emergency unit with complaints of sudden onset of weakness, easy fatigability, and dizziness. He was diagnosed with upper gastrointestinal (GI) bleeding as he gave a history of passage of dark colored and tarry stools initially, but the color of these stools had changed to bright red within the intervening hour. He was not on any steroid, blood thinner nor non-steroidal anti-inflammatory drug.

He was observed to be markedly pale with a hemoglobin (Hb) of 5.9g/dl at presentation. Consequently, he was transfused with twelve units of packed cell over the course of 2 days. His vital signs showed little evidence of hemodynamic improvement as there was ongoing blood loss (indicated by the continued passage of bloody stools and the post-transfusion Hb was 6.1g/dl) and emergency gastroscopy was put on hold because of this.

He later became stable and underwent emergency gastroscopy which revealed a submucosal mass measuring about 12mm by 10mm at the second part of the duodenum. Blood was noted to be freely oozing from it and the mucosa around the mass was markedly erythematous and swollen which significantly obscured detailed inspection of the bleeding sites (Figure 1). Following a multi-disciplinary review

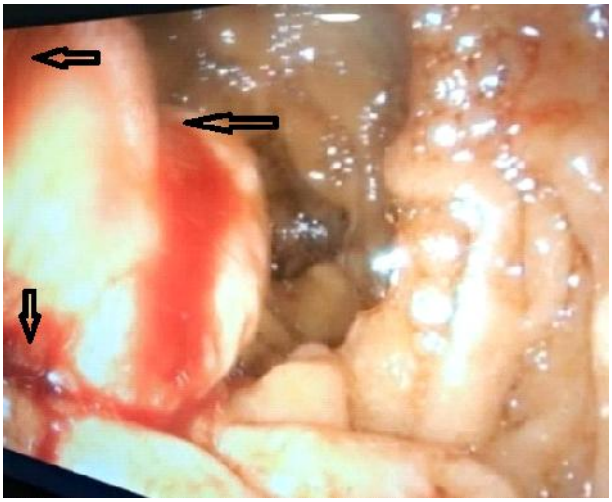

Figure 1: Endoscopic images of the submucosal duodenal mass which is shown to be oozing blood from multiple areas on its surface (arrows).

(MDR) of the case, and urgent magnetic resonance image (MRI) was obtained and interventional radiology (IR) therapy was suggested. The MRI revealed a well-defined, homogenously enhancing, soft tissue mass in the proximal portion of the second part of the duodenum.

The patient underwent IR therapy to arrest the bleeding. The celiac artery was selected and and an arteriogram performed. This demonstrated hyperemia and active extravasation into the bowel from branches of the GDA (especially the inferior pancreaticoduodenal artery). These branches and the main GDA were selectively embolized with 6-10 mm nitinol coils. After embolization, no further flow was demonstrable from the said vessels in the post-embolization images (Figure 2).

The clinical response of the patient was dramatic. His post-operative vital signs showed marked improvement from within the hour and there was no further decline in serial PCV measurements. A repeat gastroscopy done 36 hours after the placement of nitinol coils showed complete cessation of bleeding. He remained stable and was discharged home after 48 hours. A follow up visit 1 week after showed no clinical evidence of recurrence.

Histology of sections of the endoscopic biopsy of the lesion showed nodular proliferation of smooth muscle cells in the submucosa with benign spindle-shaped cells and bland elongated nuclei suggestive of a benign mesenchymal tumor (Figure 3). Immuno-histology showed features consistent with DL (positive

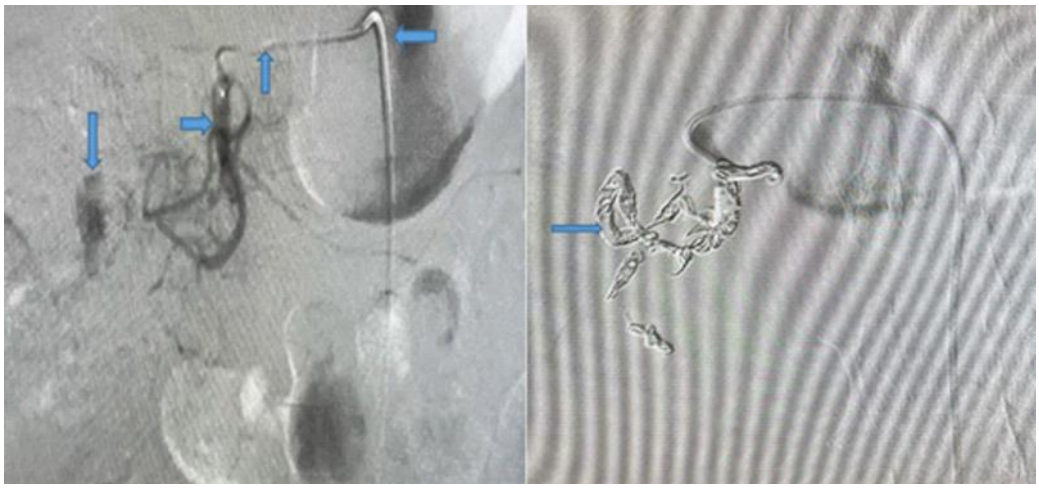

Figure 2: (**Left**) Selective angiography of the gastroduodenal artery(GDA) showing the parent catheter selecting the celiac artery (left arrow). Microcatheter (up arrow) used to gain distal access into the GDA (right arrow) with active extravasation into the duodenum (down arrow); (**Right**) Post procedural images showing multiple nitinol coils (arrow) occluding the GDA and its branches and complete cessation of extravasation following embolization.

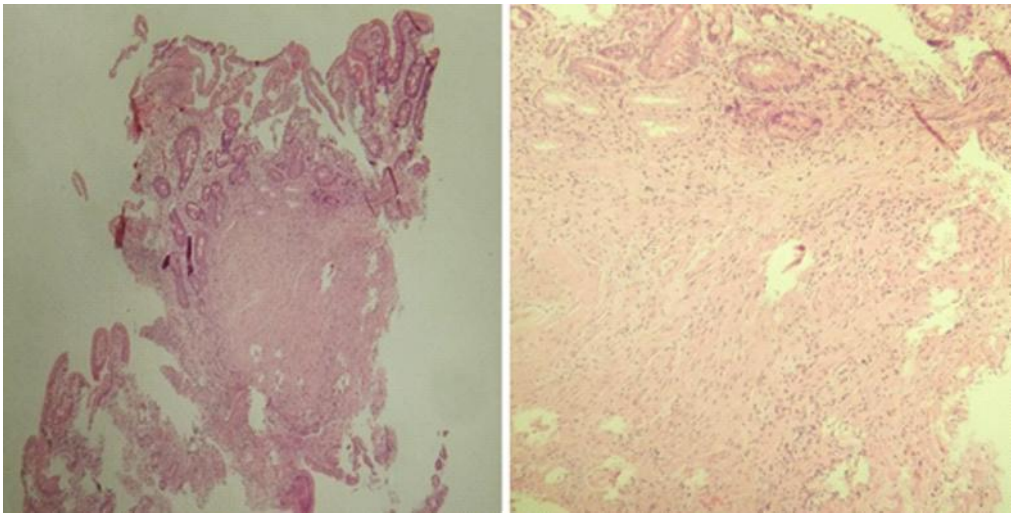

Figure 3: (**Left**) low power micrograph view showing a benign submucosal nodular neoplasm (H & E ×40); (**Right**) high power micrograph view of the lesion showing benign spindle-shaped cells with bland elongated nuclei (H & E ×200).

Desmin and Smooth Muscle Actin and negative for DOG1 stain). Thus, a diagnosis of DL was definitively made. Seven months after this incident, the elderly gentleman remains symptom free and is being followed up for possible recurrence. He has since refused overtures to have the mass surgically extricated. The follow up endoscopy and computed tomography scan results showed that there was still no bleeding and that the mass had not changed in size and radiological characteristics.

DISCUSSION

The etiopathogenesis of DL is discussed elsewhere (as referenced) but regional and international reports have underlined their rarity.[1-4] Their commonest complication is GIT bleeding, as seen in the index patient. The fundamentals of prompt hemodynamic stabilization and early diagnostic (or therapeutic) endoscopy in the management of GIT bleeding cannot be overemphasized.[7] This case illustrates that these twin pillars of care remain relevant to mitigate the morbidity and mortality associated with this condition.

The relative unavailability and unaffordability of GIT endoscopic diagnostic tools in our locality is a source of concern as its importance of endoscopy as diagnostic tool in cases of GIT bleed has been noted globally.[7] However, surrounding edema and bleeding oftentimes present important to detailed inspection as seen in this case. The prompt use of endoscopic and other high-end diagnostic facilities was decisive in the case at hand, but the question must again be asked how many facilities in the country are equipped to deliver such.

We celebrate the nascent and gradual increased uptake and delivery of IR expertise and therapeutic participation in the local care of gastrointestinal system bleeds as.[5,6] The particular expeditious reversal of the poor clinical status and prognosis in this patient is heart-warming. The national clinical and scientific community are delighted with increased availability of immuno-histology as the tool for definitively diagnosing these uncommon mesenchymal lesions.[2-4] This patient is being closely followed up with relevant scans and gastroscopies as he is averse to the suggestion of surgery to extricate the lesion. The advice for surgery is based on findings in literature and the consideration for possible re-bleeds which might endanger his life again.[1,8]

This case report documents for the first time (to the best of our knowledge) the occurrence of a massive GIT bleeding from a DL in Nigeria. The article goes further to present pertinent diagnostic (endoscopic, radiological and pathological) aspects, and the successful deployment of IR intervention. We hope the article will help heighten clinical index of suspicion for DLs and help generate further discuss as to the usefulness and increased availability and uptake of important high-end diagnostic tools and therapeutic options in this locality.

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