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Duodenal Adenocarcinoma: a Case Report of an Uncommon Tumor and a Brief Review of the Literature

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Abstract **Case Report**

Duodenal adenocarcinoma is very rare. It represents 0.3 to 1% of all gastrointestinal malignancies. The symptoms are non-specific and vague, and the diagnosis is often delayed at an advanced stage. We report a case of duodenal adenocarcinoma in a 54-year-old female who was admitted to our hospital with chronic epigastric pain. Upper gastrointestinal endoscopy revealed a thickening narrowing the lumen in the second duodenal portion, which was diagnosed, using endoscopic biopsy. The computed abdominal tomography scan showed no lymph node or distant metastases, and cephalic pancreaticoduodenectomy was performed.

Keywords: Duodenal adenocarcinoma, second part duodenum, clinical manifestations, radical surgery.

INTRODUCTION

Duodenal adenocarcinoma (DA) is a rare and uncommon neoplasm that comprises between 0.3 to 1% of all gastrointestinal malignancies [1, 2]. It is the least common of the periampullary tumors (6%) [3, 4]. The first part of the duodenum is the least common site of occurrence and most DA originate in the second part [5]. Duodenal adenocarcinoma usually present with vague and nonspecific symptoms, resembling those of more benign entities [1]. Therefore it poses a significant diagnostic challenge, and patients are often misdiagnosed or diagnosed late [6], missing the optimal treatment time and evolving into advanced DA resulting in poor prognosis [7]. Surgical treatment is a basis in DA, and although the optimal surgical procedure remains controversial and local resection of small cancers have been proposed; pancreaticoduodenectomy remains the most common procedure in curatively intended treatment [1, 8]. Here, we report a case of primary adenocarcinoma of the second portion of the duodenum in 54-year-old female patient.

CASE REPORT

A 54-year-old patient, with no relevant pathological history, was admitted for chronic moderate atypical epigastric pain associated with postprandial vomiting, anorexia, and weight loss. The patient dined fever, diarrhea, jaundice, and gastrointestinal bleeding. Physical examination upon admission found normal temperature, blood pressure, heart rate, and respiratory rate. There was mild upper abdominal tenderness without rebound tenderness or rigidity. Laboratory tests revealed anemia, with normal liver and renal function tests and tumor markers. Esophagogastroduodenoscopy showed a suspicious circumferential thickening narrowing the lumen in the second part of the duodenum with gastric stasis (Figure 1). The endoscopic biopsy specimen revealed a moderately differentiated infiltrating adenocarcinoma. Computed tomography of the abdomen showed an important gastric stasis and a suspicious circumferential thickening of the 2nd portion of the duodenum and the lower genus (Figure 2) with no lymph nodes or distant metastasis. The patient underwent surgery; macroscopic examination showed that the tumor was adhering to the pancreatic head with no liver metastasis or peritoneal dissemination. Cephalic pancreaticoduodenectomy was performed. There were no incidents during the postoperative period. After oncological evaluation no adjuvant chemotherapy treatment was given. The patient remains free of disease after 12 months of follow-up.

Figure 1: Upper gastrointestinal endoscopy showing a suspicious circumferential thickening narrowing the lumen in the second part of the duodenum

Figure 2: CT scan of the abdomen showing thickening of the duodenal wall, with an important gastric stasis

DISCUSSION

Adenocarcinoma of the duodenum (DA) is a rare malignant tumor, accounting for 0.3–0.5% of all gastroenteral malignancies [9]. 15% of them occur in the first portion, 40% in the second and 45% in the third and fourth portions of the duodenum [10]. Approximately 25-35% small intestinal adenocarcinomas occur in the duodenum [11, 12]. Data suggests that men have a higher incidence of DA than women and there is an increased incidence of this malignant tumor after the age of 40 years [13].

Establishing the diagnosis of DA is difficult. The initial symptoms are highly nonspecific and patients may not show symptoms until tumors reach a very advanced stage [1, 14]. Therefore, there is an average delay of 2–15 months from the onset of symptoms to the final diagnosis of DA [15-17].

Esophagogastroduodenoscopy remains the first-line and the gold standard for diagnosis; it allows direct visualization of the mucosa of the duodenum and biopsy of the mass [1]. Nevertheless, false negatives may exist in the third and fourth portions of the duodenum, as these are frequently inaccessible using endoscopy requiring other multiple investigations [1, 15]. Computed tomography and endoscopic ultrasound must be performed in all biopsy-confirmed cases for staging tumors, and determinating there resectability [14].

The optimal surgical procedure is not clearly defined. Radical resection is the surgical treatment of duodenal adenocarcinoma and many factors should be considered before choosing the specific intervention for DA [18, 19]. Survival was significantly higher in patients who underwent surgical resection than that in patients who received palliative therapy. Therefore, an aggressive surgical approach with complete tumor excision should be pursued whenever possible [2]. Pancreaticoduodenectomy is the most common approach in its curative surgery, it has a long and considerable survival despite the high morbidity rate, and it remains the preferred surgical option for adenocarcinoma of the first and second part of the duodenum, and in patients with locally advanced disease [20, 21]. Segmental duodenal resection with negative margins is an alternative to cephalic pancreaticoduodenectomy for distal locations [16, 22]. If the tumor is unresectabale or in the case of poor general condition of the patient, palliative surgery is indicated, with a deviation of the duodenal transit through bilio-digestive surgery or gastroenteroanastomosis [24].

Some studies have reported that lymph node metastasis, poor tumor differentiation, tumor size, tumor depth, perineural invasion and lymphovascular invasion had a significant negative impact on survival and prognosis [9, 23].

Although the role of adjuvant chemotherapy is unclear, some authors found that it leads to an improvement in long term survival. With no standard protocol, they are usually treated similarly to periampular tumors [21, 24].

CONCLUSION

Adenocarcinoma of the duodenum is a rare malignancy. Even though the manifestations are nonspecific, an early diagnosis of this neoplasm is crucial and clinicians should always maintain a high degree of suspicion and persistent investigation leading to earlier treatment, higher curative resectability and survival rates.

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