

Double Pylorus; Report of a Case*

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ABSTRACT

Introduction: Double pylorus (DP) is an uncommon condition characterized by the presence of bilateral (double) communication between the gastric antrum and the bulbous. DP was first reported in 1969 by Smith and Tuttle. This condition may arise (occur) as a result of a congenital abnormality or as an acquired complication of penetrating ulcer.

Case report: A 60-year-old female patient who presented with dyspeptic complaints had a history of diabetes mellitus and hypertension. In the upper gastrointestinal system gastroscopy performed under sedation, an ulcer was found in the antrum. In the control gastroscopy performed after two months of medical

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treatment, it was observed that the ulcer in the antrum healed, but a second lumen opened from the ulcer area to the bulb.

Conclusion: DP is an extremely rare condition and usually occurs as a complication of peptic ulcer. Since there is a positive correlation between DP and *Helicobacter pylori* (HP), diagnostic gastroscopy and detection of the presence of HP are very important in terms of treatment. PPI and, if available, HP eradication are generally recommended in medical treatment. Surgery may be required if symptoms do not improve despite medical treatment, or recurrent bleeding, obstruction, or perforation develops. Knowing the presence of DP beforehand in endoscopic procedures such as ERCP and EUS using a side-view camera is important in terms of reducing complications.

Keywords: *Double Pylorus, Gastroscopy, Helicobacter Pylori, Antrum, Ulcer.*

Çift Pilor: Bir Olgu Sunumu

Giriş: Double pylorus (DP), mide antrumu ile bulbus arasında ikili bir iletişimin varlığı ile karakterize nadir bir durumdur. DP ilk olarak 1969 yılında Smith ve Tuttle tarafından rapor edilmiştir. Kongenital bir anormalliğe veya akkiz olarak penetre ülser komplikasyonu sonucu gelişebilir.

Olgu Sunumu: Dispeptik yakınmaları nedeniyle başvuran 60 yaşındaki kadın hastanın öz geçmişinde diyabetes mellitus ve hipertansiyon öyküsü mevcuttu. Sedasyon altında yapılan üst gastrointestinal sistem gastroskopisinde antrumda ülser mevcuttu. İki aylık medikal tedavi sonrası yapılan kontrol gastroskopisinde antrumdaki ülserin düzeldiği ancak ülser alanından bulbusa açılan ikinci bir lümen geliştiği izlendi.

Sonuç: DP oldukça nadir görülen bir durum olup, genellikle petik ülser komplikasyonu olarak ortaya çıkmaktadır. DP ile HP arasında pozitif korelasyon olduğundan tanısal gastroskopi ve HP varlığının ortaya konulması tedavi açısından oldukça önemlidir. Medikal tedavide genellikle PPI ve varsa HP eradikasyonu önerilmektedir. Eğer medikal tedaviye rağmen semptomlar gerilemezse veya tekrarlayan kanama, obstrüksiyon veya perforasyon gelişirse ameliyat gerekebilir. ERCP ve EUS gibi yandaş görüşlü kamera kullanılan endoskopik işlemlerde önceden DP varlığının bilinmesi komplikasyonları azaltma açısından önemlidir.

Anahtar Kelimeler: *Çift Pilor, Gastroskopi, Helicobakter Pylori, Antrum, Ülser.*

INTRODUCTION

Double pylorus (DP) is an uncommon condition characterized by the presence of bilateral (double) communication between the gastric antrum and the bulbous (Lei et al, 2016). DP was first reported in 1969 by Smith and Tuttle (Smith et al., 1969). This condition may arise (occur) as a result of a congenital abnormality or as an acquired complication of penetrating ulcer (Hu et al., 2001). DP is an extremely rare condition and is frequently seen 0.001-0.4% in upper gastrointestinal system endoscopies (Oktaricha et al., 2021). Although this etiology is obscure (unclear), it has been reported to be associated with *Helicobacter pylori* (HP) and the use of non-steroidal anti-inflammatory drugs (Deshmukh et al, 2020). DP is more common in men and cases are reported more in Asian countries (Oktaricha et al., 2021). However, it is still unknown how DP arises but it is stated that many systemic diseases such as diabetes mellitus play a role (Oktaricha et al., 2021, Kane et al., 2015).

In this case report, a 60-year-old female patient whose DP arises after antral ulcer medical therapy was discussed.

CASE REPORT

Informed consent was taken from 60-year-old female patient who presented with dyspeptic complaints, had a history of diabetes mellitus and hypertension. There was no finding other than epigastric tenderness in her physical examination. The patient's blood laboratory parameters were within normal limits. The patient was scheduled for diagnostic gastroscopy. In the upper gastrointestinal system gastroscopy performed under sedation, an ulcer was found in the antrum. The diagnostic gastroscopy image of the patient is shown in Figure 1.



Figure 1. Diagnostic gastroscopy image of the patient.

As a result of biopsy taken from the periphery of the ulcer, chronic active gastritis and HP positivity were detected. Oral HP eradication treatment (Amoxicillin 2000 mg/day and Klaritromycin 1000 mg/day, 2 weeks) and pantoprazole treatment (40 mg/day, 2 months) were applied to the patient. In the control gastroscopy performed after two months of medical treatment, it was observed that the ulcer in the antrum healed, but a second lumen opened from the ulcer area to the bulb. The control gastroscopy image of the patient is shown in Figure 2.



Figure 2. The control gastroscopy image of the patient.

Pantoprazole treatment was continued for 6 months. In the gastroscopy performed 2 years later, DP appearance was observed. As a result of gastroscopic biopsy, chronic inactive gastritis was detected, HP was not detected.

CONCLUSION

DP is often localized in the minor curvature of the prepyloric region of the stomach. It often presents with symptoms of chronic upper abdominal pain, vomiting, dyspepsia or gastrointestinal bleeding (Fousekis et al., 2018). This patient had chronic dyspeptic complaints. In the diagnostic gastroscopy, prepyloric fistula was detected in the lesser curvature. DP may be associated with congenital anomalies such as achalasia, pancreatic divisum or heterotropic pancreas, or may occur as a complication of peptic ulcer or gastric cancer (Fousekis et al., 2018, Thapa et al., 2018). In this case report, the development of DP occurred after a complication of prepyloric ulcer.

The reason that makes DP clinically important is that it causes recurrent ulcers and bleeding in the badly epithelialized fistula tract (Thapa et al., 2018). The

patient in this case report developed DP after ulceration detected during diagnostic endoscopy. No signs of recurrent ulcer or bleeding were detected in the 2-year clinical and endoscopic controls of the patient after medical treatment. It is reported in the literature that there is a positive correlation between the development of DP and the presence of HP. For this reason, detection and treatment of HP positivity in diagnostic endoscopies gains clinical importance (Lei et al., 2016). In this patient, active antral ulcer before DP was detected in gastroscopy and HP positivity was detected because of biopsy. Also, it was determined that HP eradication was achieved in the control gastroscopy performed after medical treatment. It has been reported that DP is associated with diabetes mellitus, chronic obstructive pulmonary disease, rheumatic arthritis, cirrhosis, Bechet's disease, systemic lupus erythematosus and chronic renal failure (Fattahi et al., 2012, Hatemi et al., 2015). In addition, a case report of DP associated with adrenal adenoma was reported in the literature. It has been reported that this may develop due to corticosteroid hypersecretion (Yousuf et al., 1989). The patient in this case report had DM as an additional disease.

Double-contrast imaging and upper gastrointestinal endoscopy (GIS) are used in the diagnosis of DP (Lu et al., 2019). However, since there is a positive correlation between DP and HP and HP eradication is recommended for treatment. Upper GIS endoscopy should be considered the gold standard for diagnosis. Treatment is usually medical. If proton pump inhibitors and HP are present, eradication therapy is recommended (Lei et al., 2016). It is recommended to stop using nonsteroidal anti-inflammatory drugs and smoking along with medical treatment (Yong et al., 2018).

The patient in this case report was treated with Amoxicillin + clarithromycin for 2 weeks and eradication was observed in control gastroscopy. In the literature, it has been reported that only 9% of the cases are completely closed despite medical treatment. It has been reported that 64% of cases remain open and 27% of cases merge with the normal pylorus (Hu et al., 2001). If the symptoms do not regress despite medical treatment, or recurrent bleeding, obstruction or perforation develops, surgery may be required (Culafic et al., 2007). Partial gastrectomy, gastroenterostomy, pyloromyotomy, or pyloroplasty can be applied surgically. Recently, endoscopic treatment methods including pyloroplasty and pyloromyotomy have been reported (Hattori et al., 2020). In addition, it is important for endoscopists to know the presence of DP beforehand in endoscopic procedures using side-view cameras, such as ERCP and EUS procedures, in order to prevent complications (Sauer et al., 2012).

In conclusion: DP is an extremely rare condition and usually occurs as a complication of peptic ulcer. Since there is a positive correlation between DP and HP, diagnostic gastroscopy and detection of the presence of HP are very important in terms of treatment. PPI and, if available, HP eradication is generally

recommended in medical treatment. Surgery may be required if symptoms do not improve despite medical treatment, or recurrent bleeding, obstruction, or perforation develops. Knowing the presence of DP beforehand in endoscopic procedures such as ERCP and EUS using a side-view camera is important in terms of reducing complications.

AUTHOR CONTRIBUTION

Uğur KESICI: Endoscopic examination, article writing, literature review.

Salih GENÇ: Literature review

Nihat POLAT: Literature review

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