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GAVIN PUBLISHERS

Journal of Surgery

Kiudelis M, et al. J Surg: JSUR-1117.

Case Report

DOI: 10.29011/2575-9760. 001117

Gastric Syphilis Mimicking Neoplasm: A Case Report

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Citation: Kiudelis M, Kubiliute E, Kupcinskas J, Adamonis K, Poskiene L, et al. (2018) Gastric Syphilis Mimicking Neoplasm: A Case Report. J Surg: JSUR-1117. DOI: 10.29011/2575-9760. 001117

Received Date: 08 March, 2018; **Accepted Date:** 13 March, 2018; **Published Date:** 20 March, 2018

Abstract

Introduction: Gastric syphilis is a rare and challenging diagnosis in clinical practice. Due to decreasing incidence of syphilis, the encounterment with the diagnosis became exceptionally rare. Kaunas regional Biomedical Research Ethics Committee approved the presentation of this case report (protocol no.BEC-LSMUC(R)-26).

Case Presentation: A 46 -year -old Caucasian female with a 3 months history of mild epigastric pain, followed by vomiting, weight loss, and early satiety. The symptoms and findings of instrumental examinations led to initial diagnosis of gastric cancer. Partial distal gastrectomy and D2 lymphadenectomy was performed and histological examination showed active chronic gastritis with dense lymphocytic and plasmocytic infiltration -alterations were in line the diagnosis of syphilis, which was further confirmed by serological tests.

Conclusion: Epigastric pain, anorexia, vomiting, weight loss, together with radiological, endoscopic and microscopic appearance of gastric syphilis may easily be confused with gastric lymphoma or carcinoma. Furthermore, endoscopic gastric biopsies show non-specific histological alterations. We suggest that in all patients with gastric symptoms mimicking neoplasm with non-specific endoscopic or histological findings, VDRL and TPHA tests should be performed.

Keywords: Gastric Syphilis; Gastrectomy; Plasmocytic Infiltration

Introduction

Syphilis is an infectious disease caused by the spirochetes *Treponema pallidum*, transmitted mainly through sexual contact or blood transfusion. Since 15th century syphilis is known as a sexually transmitted disease. In the beginning of 20th century it was a common disease with severe complications including neurological and cardiovascular manifestations. Soon, after the introduction of penicillin along with organized public health measures, prevalence of syphilis became less common [1]. Gastric syphilis has been first described in 19th century. The first two cases of suspected Gastric Syphilis (GS) were reported in 1834 by Andral [1]. Studies in the beginning of 20th century based by clinical, radiological and serological findings showed high incidence of syphilitic gastritis, which was later denied by histological tests after autopsies [2,3]. Syphilitic gastritis was described as complication of tertiary syphilis, but the subsequent articles show that stomach was commonly affected in early disease stages [4,5]. Herein, we report a clinical case of secondary syphilis which was diagnosed by histological examination of gastric specimen and confirmed by *Treponema pallidum* hemagglutination test. Kaunas regional Biomedical Research Ethics Committee approved this case report (protocol no.BEC-LSMUC(R)-26).

Case Report

A 46 -years- old Caucasian female presented to the hospital with 3 months history of mild epigastric pain, followed by vomiting, weight loss, and early satiety (lost 10 kg during last 3 months). Laboratory tests revealed decrease in total serum protein (57 g/l) and albumin (29 g/l) level. On fibro esophagogastroduodenoscopy

thickened gastric mucosa with ulcers and fibrin were observed in the antral part of the stomach (Figures 1,2), together with partial stenosis of pyloric canal. Numerous biopsies of altered gastric mucosa were taken, because endoscopic resembled gastric cancer.

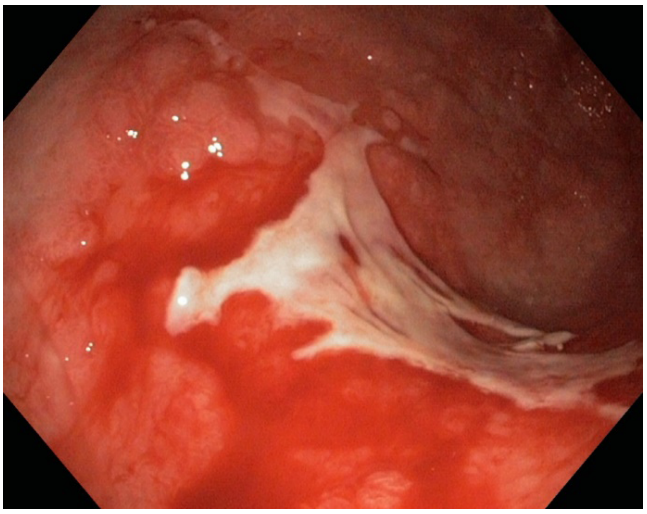

Figure 1: Endoscopic findings: An irregularly ulcerated, nodular, edematous and friable mass from the mid-body to antrum of the stomach are noted.

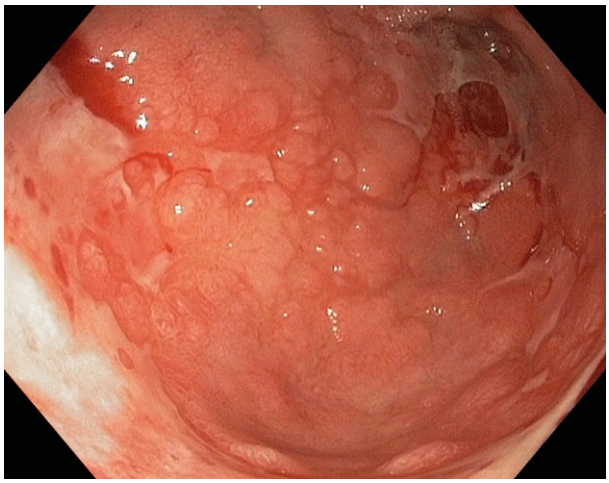

Figure 2: Endoscopic findings: An irregularly ulcerated, nodular, edematous and friable mass from the mid-body to antrum of the stomach are noted.

Interestingly, histological analysis of biopsy material showed only active chronic gastritis with ulceration and suspicion of atypical lymphoproliferation. Stomach barium contrast X-ray examination was performed and revealed the infiltration and thickening of the stomach wall from the middle third of the body to the pyloric ring; shortening of antrum (Figure 3).

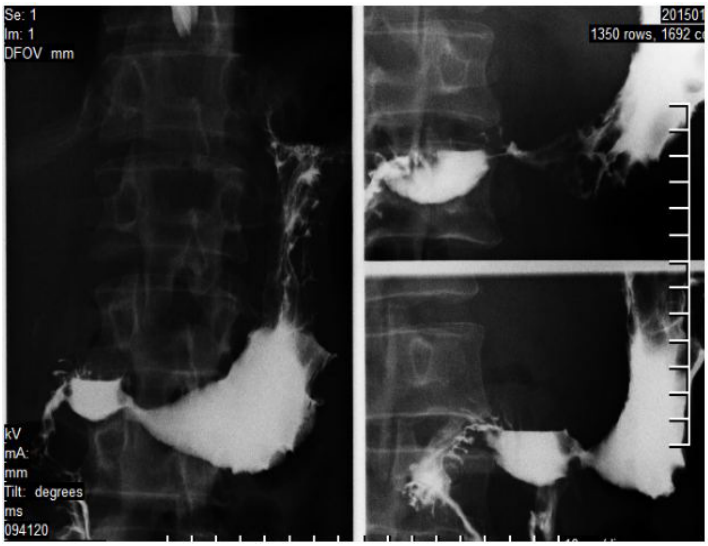

Figure 3: Stomach contrast X-ray examination: Infiltration and thickening of the stomach wall from the middle third of the body to the pyloric ring; shortening of antrum.

Gastric cancer (infiltrative type) in the lower part and pyloric region was suspected. Abdominal CT scan was performed and identified only thickened wall of the antrum (Figure 4) without any additional pathologic changes in the abdominal cavity.

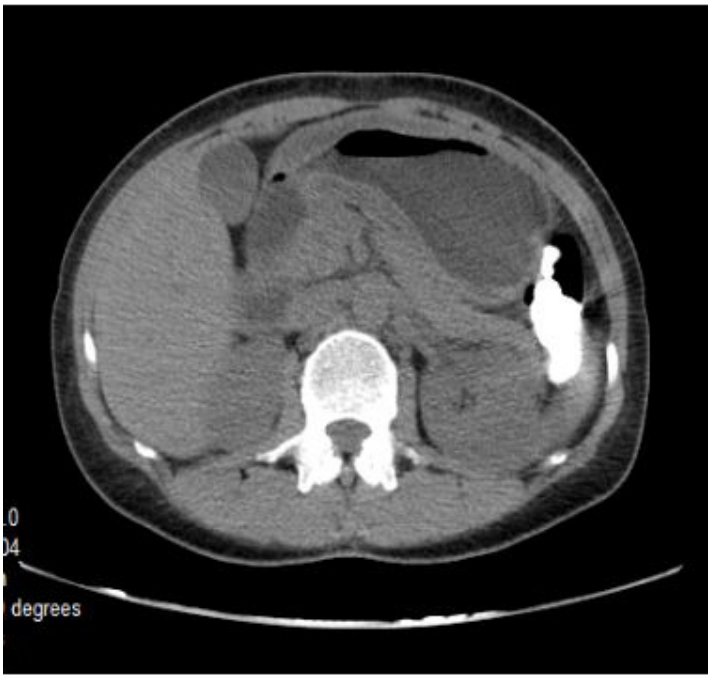

Figure 4: Computed tomography, axial view: Circular wall thickening of the antrum.

Tumor markers including CEA, CA-19-9 were within normal ranges. Enteric nutrition was initiated because of patient's poor nutrition status. A second endoscopic examination with multiple biopsies was performed, because gastric lymphoma or gastric cancer was suspected. Endoscopic appearance remained the same and histological specimens showed active chronic gastritis with ulceration, but no evidence of gastric malignancy or gastric lymphoma. Patient was discussed in a multidisciplinary tumor board and referred for surgery due to high clinical suspicion of gastric malignancy and pylorostenosis. Partial distal gastrectomy and D2 lymphadenectomy was performed. A clear gastric tumor wasn't identified during surgery, but all lower stomach wall was infiltrated with thickened and constricted pyloric ring. Recovery after operation was without any complications, all clinical symptoms disappeared, and patient was discharged 7 days after surgery. The final histological analysis of removed specimen showed active chronic gastritis with dense lymphocytic and plasmocytic infiltration (Figures 5,6) and also inflammatory changes in lymph nodes -changes were mostly similar to gastric syphilis. Serological tests for syphilis were performed. TPHA (*Treponema pallidum* hemagglutination) test was positive, which confirmed the diagnosis of secondary syphilis. Targeted therapy against syphilis (penicillin) was prescribed on outpatient basis.

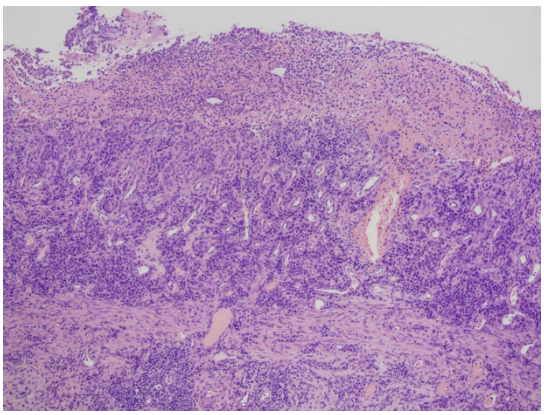

Figure 5: Histological findings: stomach mucosa with huge lymphocytic and plasmocytic infiltration, also with some neutrophiles. There are no any changes in muscular and subserosal layers.

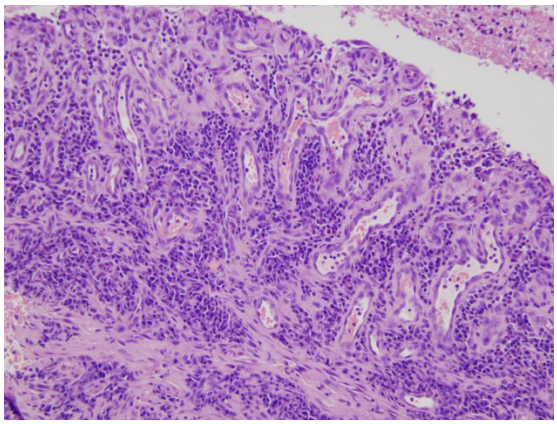

Figure 6: Histological findings: stomach mucosa with huge lymphocytic and plasmocytic infiltration, also with some neutrophiles. There are no any changes in muscular and subserosal layers.

Discussion

The clinical presentation of patients with isolated gastric syphilis is highly variable and nonspecific. The most common symptoms of disease are epigastric or abdominal pain/fullness (92%), followed by vomiting, weight loss, and early satiety [6]. Our patient also had all of these clinical symptoms. The systematic review of published cases of gastric syphilis [6] stated that weight loss was prominent in many cases: in 65% of early disease and in 53% of late disease cases. Anorexia was reported in 15% of the cases, more frequently in late stage of disease (25% vs. 10% in early disease). Authors of this study also point out that physical examination of patients with gastric syphilis usually is unremarkable. Epigastric tenderness was reported in half of the reviewed cases and other clinical findings suggestive of syphilis were infrequently noted. The majority of patients reviewed had neither a history (87%) nor physical examination (56%) suggestive of syphilis [6]. Published data clearly suggest that gastric syphilis cannot be diagnosed using medical history and/or clinical examination alone without furthermore targeted evaluation. Previous studies state that radiological findings revealed fibrotic narrowing and rigidity of the gastric wall as the most common finding (43%), followed by hypertrophic and irregular folds (26%), multiple polypoid

filling defects representing mucosal nodules (22%), while mass lesions were observed only in few cases [7]. Fibrotic narrowing and rigidity of the stomach wall are more often in late stage of the disease. The antrum seemes to be the most commonly affected area (56%), followed by mid-body to pylorus (26%), while upper body or whole stomach are affected in rare cases [6,7]. Radiological examination of our reported patient also showed fibrotic narrowing and rigidity of antrum and pylorus of the stomach.

In most gastric syphilis cases endoscopic findings revealed more than one lesion type including multiple ulcerations, ulcerative gastritis, nodular mucosa, erosions, large ulcer, thickening folds, narrowing and rigidity, and mass lesion [8-10]. Fibrotic and narrowing are more often detected in the late disease, while ulcerative gastritis is almost equally reported in both. Most commonly affected gastric parts are distal body and antrum, while gastric body and fundus are less frequently affected. Jones and Lichtenstein believe that primary syphilis normally has no radiologic manifestations, secondary stage may be accompanied by nonspecific gastritis with diffusely thickened folds that may become nodular, with or without detectable ulcers and, as the infection becomes more chronic, a mass-like lesion may develop and the inflammation results in fibrotic narrowing of the gastric wall [11]. Radiological and endoscopic findings are not very specific, so gastric carcinoma is initially suspected in 85-95% of patients with gastric syphilis as in the present case. Radiological, endoscopical, and even pathological examination for gastric syphilis must be differentiated with lymphoma, tuberculosis, carcinoma, or Crohn's disease; however gastric involvement in syphilis is reported to abruptly end at the pylorus, while lessions of other ethiological origin typically may also extend into the duodenum [6,11,12].

Spirochetes may not always be detected in endoscopic biopsy specimens in gastric syphilis [13]. Specific silver stains, immunofluorescent or immunoperoxidase stains for *T. pallidum* are usually required to identify spirochetes [14]. The histologic diagnosis of syphilis is very challenging. Histological findings may include chronic gastritis with dense plasmocytic and lymphocytic infiltrates. Thickened arterial walls with perivascular round cell infiltrates, and markedly thickened submucosa with diffuse infiltration of lymphocytes and plasma cells as well as endovasculitis are also common histological findings [15]. Vasculitis with features of endarteritis or endophlebitis is a typical finding in gastric syphilis, but is rarely observed in gastric mucosa biopsy samples, because they typically do not reach submucosal layer. In the present case endovasculitis or hypertrophic arterial or venular walls were not prominent, but stomach mucosa with huge lymphocytic and plasmocytic infiltration was clearly visible.

Conclusions

Diagnosis of gastric syphilis is rare and challenging in the clinical setting. Symptoms including epigastric pain, anorexia, vomiting, weight loss and early satiety are nonspecific and frequently mimic gastric neoplasia. Furthermore, clinical, radiological, endoscopic and microscopic appearance of gastric syphilis may easily be confused with gastric lymphoma or carcinoma. It must be pointed out that endoscopic gastric biopsies due not show specific histological alterations. Our case report clearly shows that in all young patients with gastric symptoms mimicking neoplasia and nonspecific endoscopic or histological findings, performing of VDRL and TPHA tests for syphilis should be considered.

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