



Streptococcus bovis Bacteremia and Endocarditis Leading to the Diagnosis of Synchronous Colon and Appendiceal Adenocarcinoma



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Background

- Colon adenocarcinoma has been shown to be associated with appendiceal adenocarcinoma and *Streptococcus bovis* (*S. bovis*) infection.
- An association between appendiceal cancer and *S. bovis* infection has not been reported.
- This is a case of *S. bovis* bacteremia prompting colonoscopy and subsequent diagnosis of colon adenocarcinoma and incidental diagnosis of appendiceal adenocarcinoma.

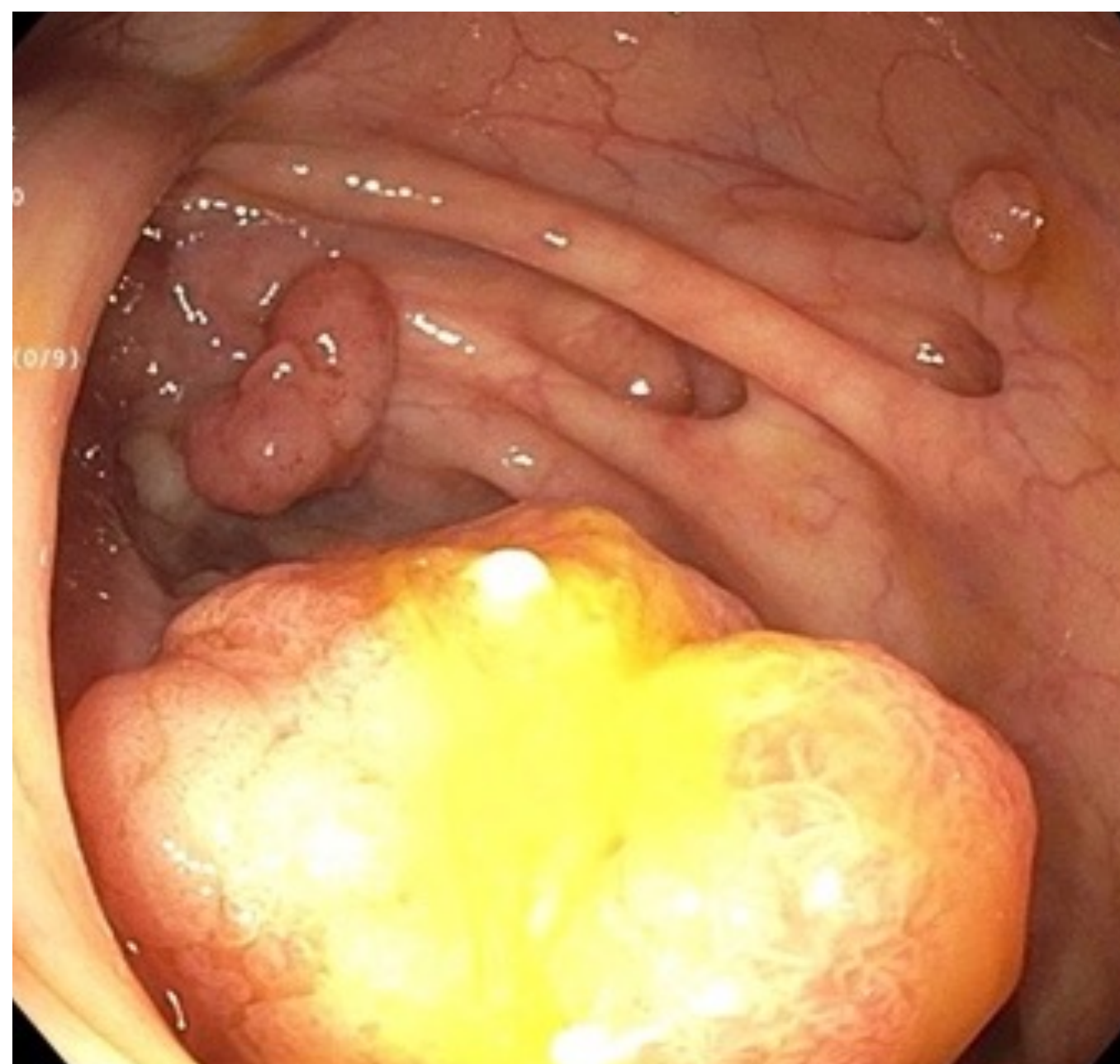


Image A. Colonoscopy image showing ascending colon mass with diverticulosis and other polyps.

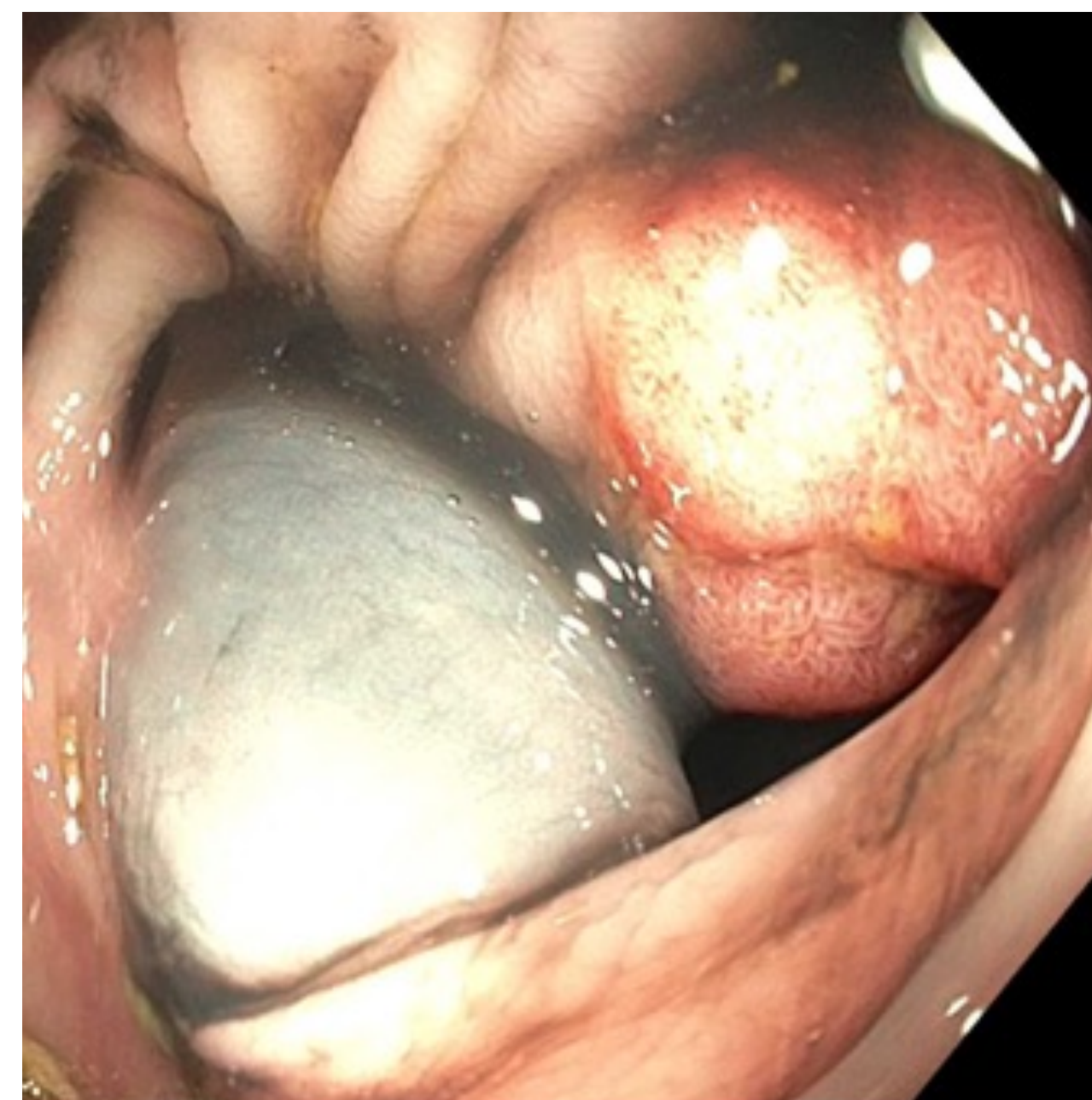


Image B. Colonoscopy image showing sigmoid colon mass.

Case Description

A 77-year-old male with a medical history of diabetes mellitus, hyperlipidemia, hypertension, gastroesophageal reflux disease, obstructive sleep apnea, chronic obstructive pulmonary disease, peripheral vascular disease, coronary artery disease status post coronary artery bypass graft surgery, abdominal aortic aneurysm status post repair surgery, heart failure with preserved ejection fraction, and aortic stenosis was brought to the emergency department by ambulance for shortness of breath and chest pressure.

- On initial examination, vital signs were hemodynamically stable with a temperature of 103.2 °F.
- Physical examination revealed diaphoresis, diffuse rales on auscultation of the lungs, and trace edema of the bilateral lower extremities.
- Laboratory values were significant for lactic acid of 2.2 mmol/L, WBC count of 9,000/ μ L, and troponin I level of 4.270 ng/mL.
- Electrocardiogram was equivocal for acute myocardial infarction.
- Chest x-ray showed pulmonary vascular congestion.
- Emergent cardiac catheterization was negative.
- Blood cultures were reported as *S. bovis*.
- Transthoracic echocardiogram (TTE) was performed and showed severe aortic stenosis with no vegetations.
- Transesophageal echocardiogram (TEE) showed a mobile vegetation on the mitral valve with no other valvular involvement consistent with infective endocarditis (IE).
- Patient was diagnosed with an intramuscular vein thrombosis of the left lower extremity and was started on therapeutic anticoagulation.
- The patient developed anemia and melena with stool positive for occult blood.
- Colonoscopy showed a large mass in the ascending colon, a large villous appearing mass in the sigmoid colon, multiple polyps, and severe diffuse diverticulosis (Images A, B).
- Computed tomography (CT) of the abdomen and pelvis showed no evidence of metastasis.
- The patient underwent successful balloon valvuloplasty of the aortic valve as a bridging procedure prior to colon resection.
- Sigmoid colon resection and right colectomy were performed.
- Pathology of the sigmoid colon showed tubulovillous adenomas with high-grade dysplasia and was negative for submucosal invasion (Image C). Pathology of the right colon showed well-differentiated appendiceal adenocarcinoma of the distal appendix invading the muscularis propria with appendiceal serosa and fat negative for invasion. Pathology of the right colon also showed intramucosal adenocarcinoma of the ascending colon without lymphovascular space invasion (Image D).
- Nineteen lymph nodes were negative for metastasis.
- The patient finished treatment for IE.
- The patient is to undergo transcatheter aortic valve replacement in the future.

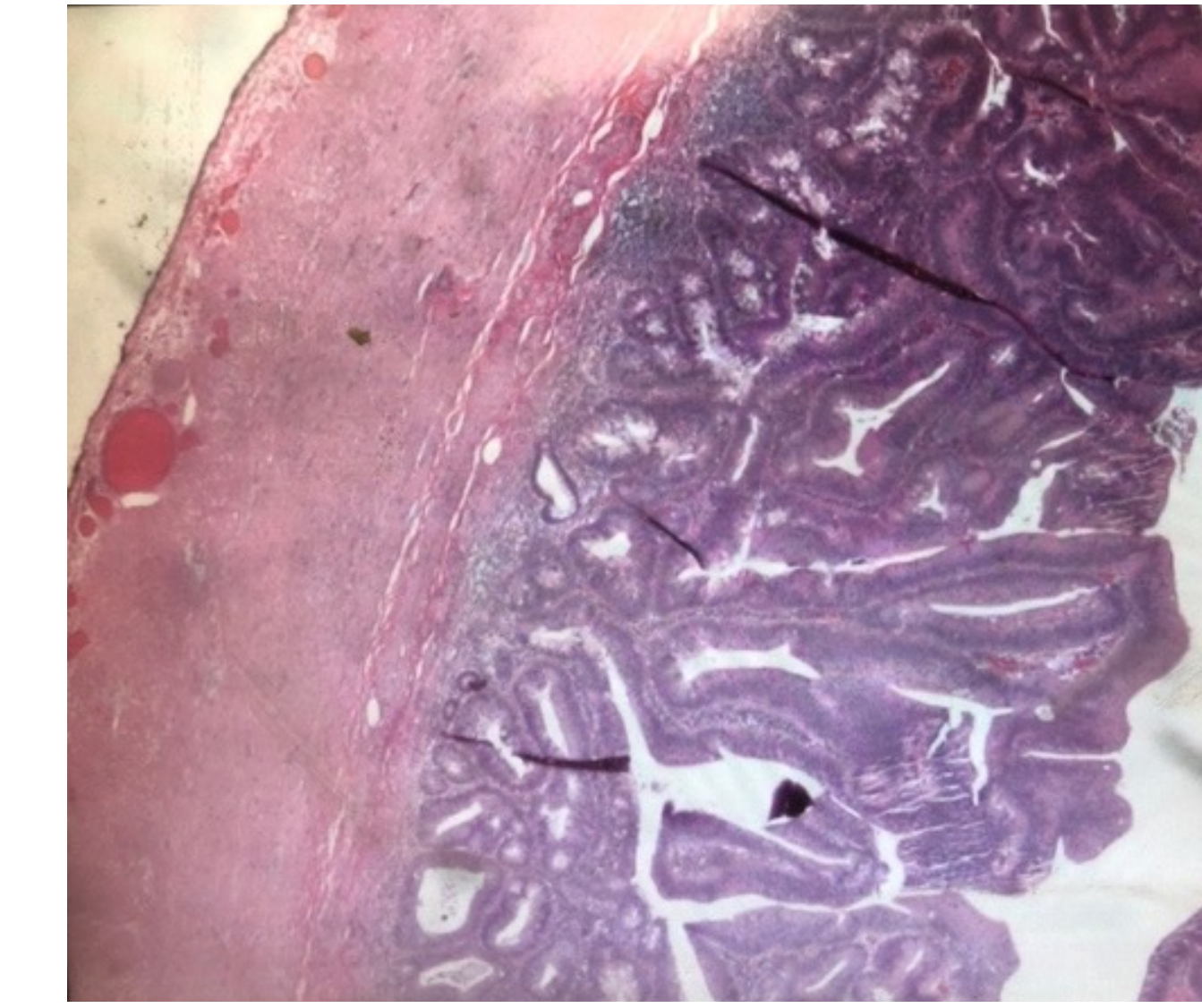


Image C. Histological image of sigmoid colon resection showing tubulovillous adenoma with high-grade dysplasia.

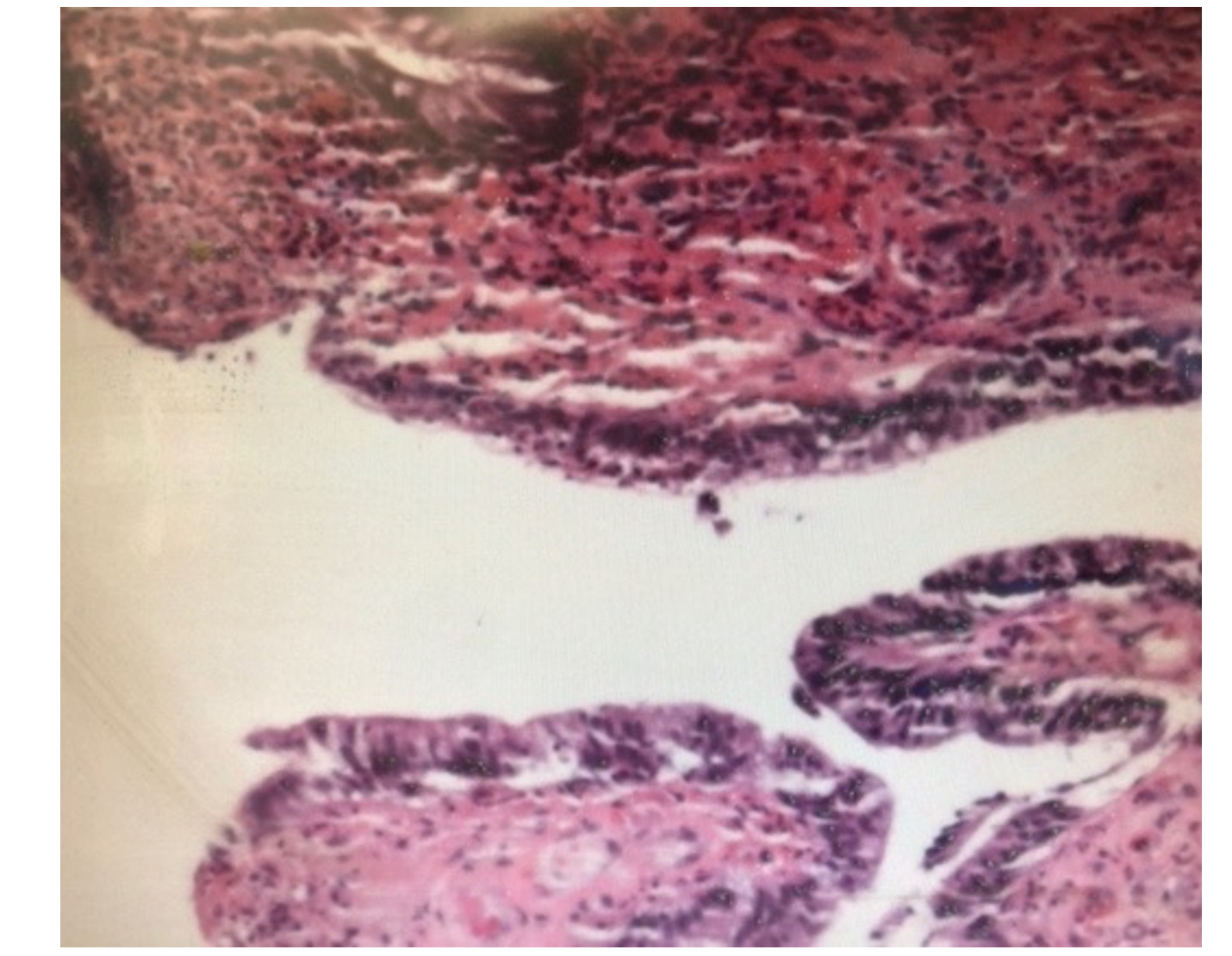


Image D. Histological image of right hemicolectomy specimen showing in-situ adenocarcinoma.

Discussion

- Appendiceal cancer is very rare, affecting only 2900 individuals in the US over 5 years (2012-2016), but the incidence has been steadily increasing since 1992.¹
- It is usually diagnosed when appendectomy is performed for suspected infectious appendicitis.
- It has been proposed that patients with appendiceal adenocarcinoma carry an increased risk of colon adenocarcinoma and should therefore be screened with colonoscopy at time of diagnosis.²
- When *S. bovis* bacteremia is diagnosed, it is important to evaluate for colon cancer with colonoscopy.
- In a meta-analysis, it was shown that 60% of patients with *S. bovis* infection had adenomas/carcinomas.³
- This patient's cancer was diagnosed early due to the presence of bacteremia.
- It remains unknown if there is an association between appendiceal adenocarcinoma and *S. bovis* infection.

Contact

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