Recurrent Intervention in The Superior Mesenteric Artery Occlusion in Buerger's Disease

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ABSTRACT

Buerger's disease, also known as thromboangiitis obliterans, is a nonatherosclerotic, inflammatory disease with recurrent, segmental involvement that affects small to medium diameter arteries and veins. Involvement of visceral vessels is rare in the disease, which usually progresses with distal extremity involvement. In this case, a 47-year-old male patient who was treated endovascular intervention reccurently of mesenteric artery occlusion due to Buerger's disease will be discussed.

Key Words: Buerger's disease; intestinal ischemia; mesenteric artery occlusion.

Buerger Hastalığında Süperior Mezenter Arter Oklüzyonuna Tekrarlayan Girişim

ÖZ

Tromboanjitis obliterans olarak da bilinen Buerger hastalığı, orta ve küçük çaplı arterleri ve venleri etkileyen, tekrarlayan, segmental tutulumlu, nonaterosklerotik, inflamatuvar bir hastalıktır. Genellikle distal ekstremite tutulumu ile seyreden hastalıkta visseral damarların tutulumu nadirdir. Bu olgu sunumunda 47 yaşında bir erkek hastada Buerger hastalığına bağlı mezenter arter tıkanıklığının tekrarlayan endovasküler tedavisi anlatılmaktadır.

Anahtar Kelimeler: Buerger hastalığı; intestinal iskemi; mezenterik arter oklüzyonu.

INTRODUCTION

Thromboangiitis obliterans is a segmental, nonatherosclerotic, inflammatory disease, also known as Buerger's disease, which most commonly affects small to medium-sized extremity arteries and veins[(1)]. Buerger's disease with mesenteric artery involvement usually occurs sporadically[(2)]. Although Buerger's disease is generally seen as a disease of the distal extremities, it has also been stated that it can cause mesenteric vasculopathy[(3)]. The long-term success rates of endovascular treatments in Buerger's disease are very low. Surgical treatments are also not possible due to widespread and distal involvement[(4)]. Albeit percutaneous treatments can be performed in mezenteric artery stenosis bypass surgery may be an appropriate treatment approach in recurrent stenosis and chronic ischemia[(5)]. However, in addition to all these interventional therapies, the patient should stop smoking and, if necessary use anti-inflammatory treatment.

CASE REPORT

Our 47-year-old male patient had inflammatory bowel disease, peripheral artery disease, hypertension and chronic gastritis in addition to Buerger's disease. He received proton pump inhibitor, pancreatine, acetylsalicylic acid, statin and nifedipine as medical treatment. He has been amputated from the bottom of the bilateral knee of the lower extremity in 2012. As a result of 55 kilograms weight loss in 2017, superior mesenteric artery (SMA) stenosis was detected and SMA balloon angioplasty was performed by interventional radiology (Figure 1A-B).

In 2018, the patient's complaints of abdominal pain and weight loss started again. In April 2018, computerized tomography (CT) angiography revealed occlusion in SMA again (Figure 2A-B).

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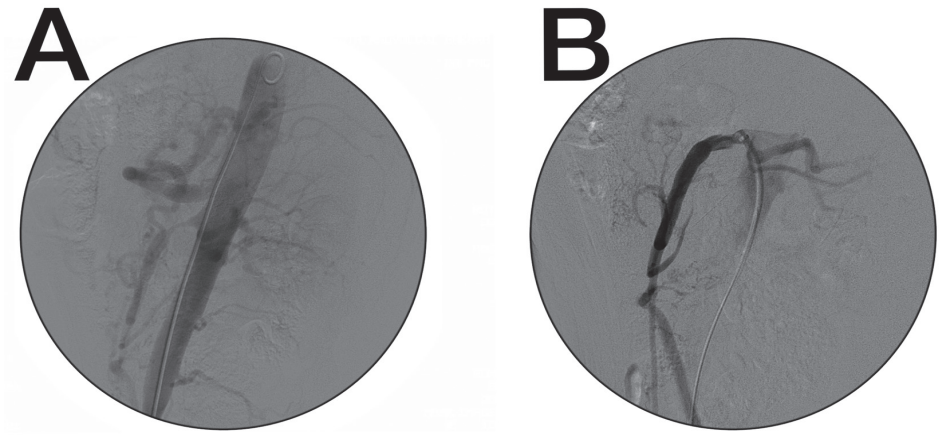

Figure 1A-B. Occlusion and percutaneous balloon dilatation images of superior mesenteric artery.

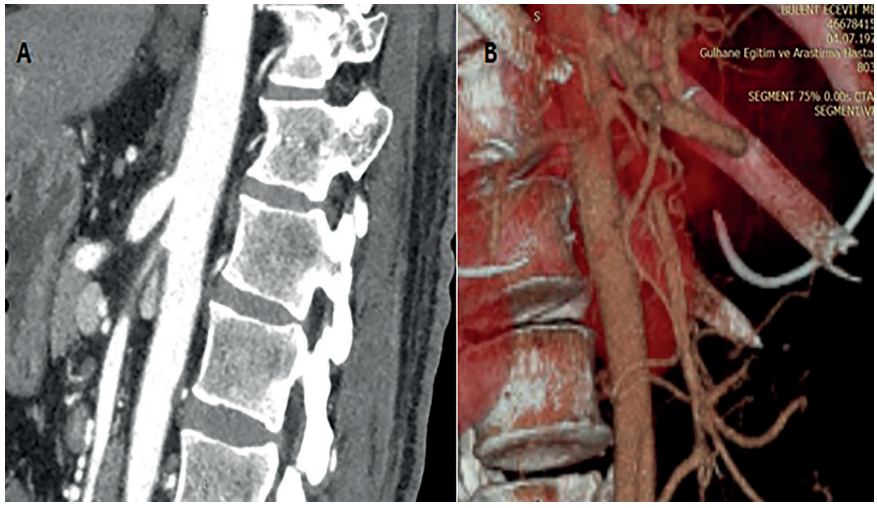

Figure 2A-B. Computerized tomographic angiography image of superior mesenteric artery occlusion.

We decided to perform percutaneous intervention to SMA. The lesion was passed with a 0.014" coronary guidewire. Then the guide was changed with an 0.035" Nitrex wire and was implanted with a 7.0 x 37 mm balloon expandable peripheral stent after balloon angioplasty performing with a 4.0 x 40 mm balloon (Figure 3A-D). In the patient's follow-up, abdominal pain complaints regressed and he started to gain weight. However, in December 2018, the patient's complaints were started again and CT angiography showed that the stent was occluded at the SMA (Figure 4).

As a result, we decided to perform percutaneous intervention again at the patient. With the left brachial artery approach, we crossed a total occlusion of SMA with 0.014" coronary wire after that, balloon angioplasty performed with 2.0 x 12 mm and 4.5 x 15 mm coronary semi-compliant balloon. After that the wire was exchanged with 0.035" Nitrex wire with micro-catheter support and balloon angioplasty was performed with 7.0 x 40 mm balloon and complete patency was achieved (Figure 5A-D). After the procedure, the patient's complaints regressed and he started to gain weight again.

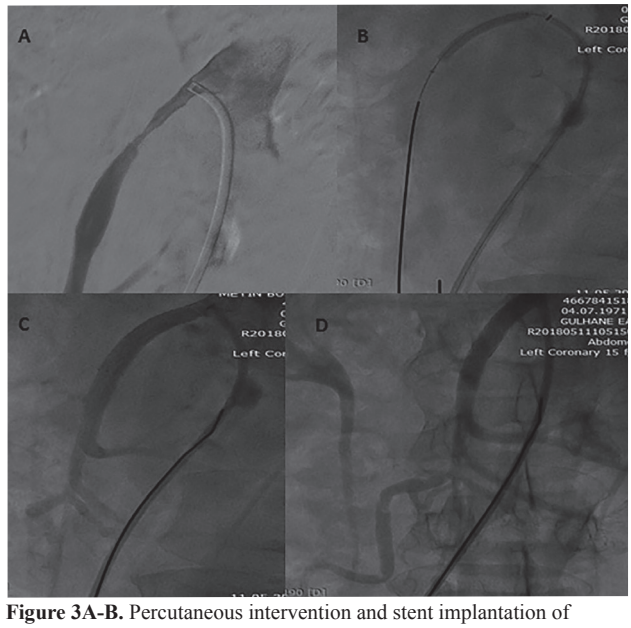

Figure 3A-B. Percutaneous intervention and stent implantation of superior mesenteric artery.

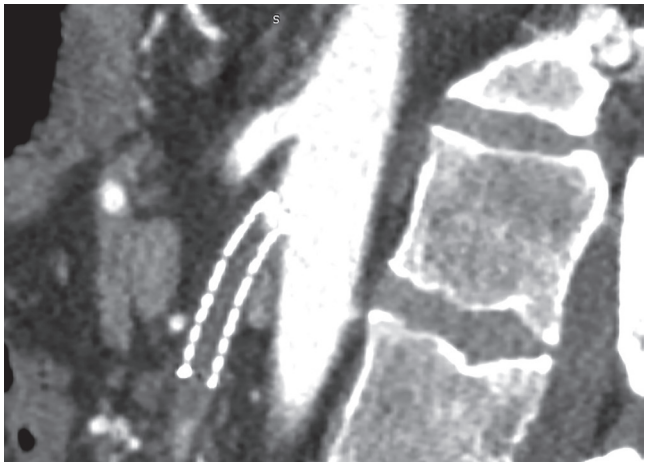

Figure 4. Restenosis of the stent in the superior mesenteric artery.

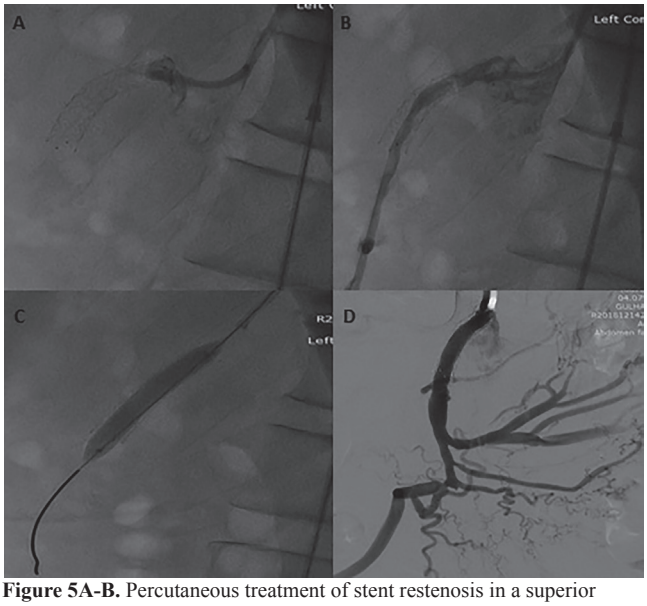

Figure 5A-B. Percutaneous treatment of stent restenosis in a superior mesenteric artery.

DISCUSSION

Buerger's disease is an inflammatory disease with unknown aetiology, affecting small and medium vessels. The disease usually involves the extremity arteries and veins, and occasionally the intestinal mesentery arteries. Patients are a generally young smoker. Cessation of smoking is the most important treatment for the disease.

Several factors are held responsible for the mechanism of recurrent SMA stenosis and thrombosis. These can be listed as hypersensitivity, inflammation triggered by tobacco, stent under expansion and antiaggregant resistance. Like, lower extremity arteries percutaneous balloon angioplasty may increase the vessel inflammation in SMA. Therefore, ensuring smoking cessation and, if necessary, anti-inflammatory treatment is a priority in these patients.

Intestinal involvement should be considered in Buerger's disease, principally in the presence of acute developing abdominal pain. Abdominal contrast computed tomography examination helps in the diagnosis of mesenteric artery stenosis. Due to the high mortality rate in acute mesenteric ischemia, early diagnosis and revascularization should be considered in an anatomical region that can be intervened[6-8].

There are two treatment options for artery thrombosis due to Buerger's disease. These are endovascular intervention and surgery options. Endovascular intervention is seen as the primary treatment option. Balloon and/or stent can be applied. It also has a lower postoperative risk than surgery. The surgical option is used after unsuccessful endovascular interventions and in situations where it is technically difficult to perform the intervention endovascularly. Bypass surgery may be considered in selected patients with severe ischemia and appropriate distal vessels.

CONCLUSION

It's known, in Buerger's disease, the gastrointestinal involvement of Buerger's disease is difficult to diagnosis and has a poor prognosis. In order to prevent the development of intestinal obstruction and gangrene, early interventional evaluation is recommended if patients with known or suspected clinical signs of Buerger's limb disease complain of gastrointestinal symptoms. However, the results of percutaneous interventions in these patients are not sufficient and the rates of restenosis are quite high. If the disease recurs despite percutaneous intervention, surgical options should be considered.

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