DOI: 10.5350/BTDMJB201410208

Partial Splenectomy for Inflammatory Pseudotumor of the Spleen: A Case Report

Fatih Başak[1], Mustafa Hasbahçeci[1], Tolga Canbak[1], Mujgan Çalışkan[1], Aylin Acar[1], Gürhan Baş[1], Orhan Alimoğlu[1], Aslıhan Semiz Oysu[2], Müberra S. Yılmaz[3], Gözde Kır Çınar[3]

[1]*Umraniye Education and Research Hospital, Department of General Surgery, Istanbul*
[2]*Umraniye Education and Research Hospital, Department of Radiology, Istanbul*
[3]*Umraniye Education and Research Hospital, Department of Pathology, Istanbul*

ÖZET

Dalağın inflamatuar psödotümöründe parsiyel splenektomi: Olgu sunumu

Bu çalışmada dalakta kitle nedeni ile kısmi splenektomi operasyonu yaptığımız 46 yaşındaki erkek bir olguyu sunuyoruz. Olguda dalaktaki kitle rutin muayene sırasında bulundu. Bu lezyonun kesin tanısı ameliyat öncesi yapılamadı. İntraoperatif patolojik frozen inceleme ile dalak inflamatuar psödotümörü tanısı ortaya çıktı. Kısmi splenektomi operasyonu yapıldı. Ameliyat sonrası dönemi sorunsuz geçti. İnflamatuar Psödotümör, benign, reaktif ve inflamatuvar bir süreçtir. Dalak korunması, daha iyi bir immünolojik sonuç amacı ile iyi huylu lezyonlar için amaçlanmıştır. Sonuç olarak, kısmi splenektomi operasyonu uygun bir cerrahi tedavi yöntemi olarak kabul edilebilir.

Anahtar kelimeler: Psödotümör, dalak, splenektomi

ABSTRACT

Partial splenectomy for inflammatory pseudotumor of the spleen: a case report

We present a case of a 46-year-old man who underwent partial splenectomy operation for splenic mass. Splenic mass was found during routine examination. Definitive diagnosis of this lesion couldn't be made before operation. Intraoperative frozen section pathological examination revealed diagnosis of inflammatory pseudotumor of the spleen. Partial splenectomy operation was performed. Postoperative course was uneventful. Inflammatory pseudotumor is a benign, reactive, and inflammatory process. Preservation of the spleen is purposed for benign lesions to have a better immunological outcome. In conclusion, partial splenectomy operation can be considered as a suitable method of surgical treatment.

Key words: Pseudotumor, spleen, splenectomy

Bakırköy Tıp Dergisi 2014;10:78-81

INTRODUCTION

Splenic tumors are relatively uncommon and difficult to diagnose before surgery. They are mostly detected during imaging studies. Inflammatory pseudotumors (IPs) present as masses at various locations, including spleen (1). Definitive diagnosis of these lesions may not always be made preoperatively (2). In this report, we present a 46-year-old man with IP of the spleen, misdiagnosed preoperatively as malignant splenic mass.

Yazışma adresi / *Address reprint requests to:* Fatih Başak
Umraniye Education and Research Hospital, Department of General Surgery, İstanbul

Telefon / *Phone:* +90-505-503-4571

Elektronik posta adresi / *E-mail address: fatihbasak@gmail.com*

Geliş tarihi / *Date of receipt:* 12 Ekim 2011 / October 12, 2011

Kabul tarihi / *Date of acceptance:* 15 Şubat 2012 / February 15, 2012

CASE REPORT

A 46-year-old man admitted with a 3 month history of weight loss and excessive sweating. Past medical history included hypertension, hiperlipidemia and diabetes mellitus. He had no history of abdominal surgery, trauma or alcohol abuse. On physical examination, splenomegaly was found. Laboratory findings were unremarkable. Endoscopic studies were normal. Abdominal ultrasound showed a well-defined hypoechoic mass measuring 75x80 mm in the spleen. Computed tomography scanning revealed a

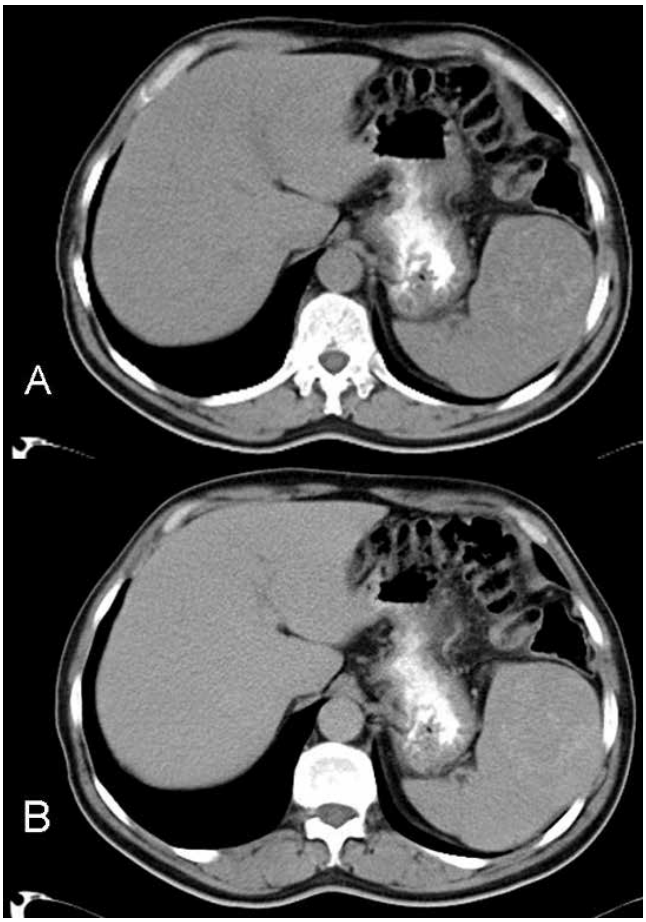

Figure 1: Unenhanced computed tomography scans (A) revealing a heterogeneous intrasplenic area with indistinct margins and mottled densities. Following intravenous contrast injection (B) a slight peripheral enhancement was noted.

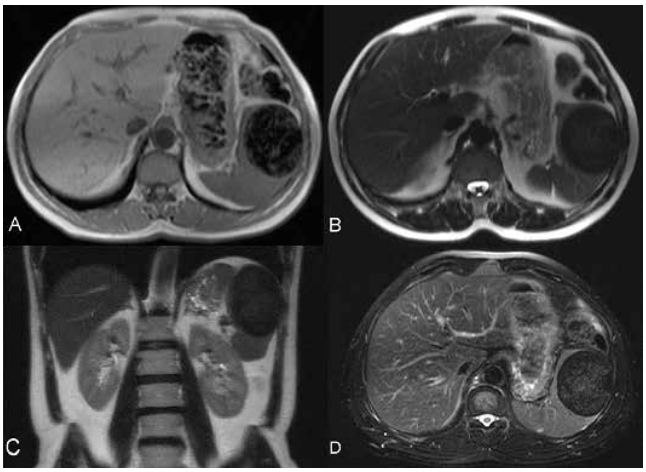

Figure 2: Magnetic resonance imaging demonstrating a sharply demarcated, hypointense mass in the spleen. The mass was predominantly hypointense on T1-weighted axial (A) and T2-weighted axial (B) and coronal (C) images. Fat saturated T2-weighted image revealed no fat content (D).

heterogeneous area with indistinct margins in the spleen (Figure 1). The lesion caused a slight bulging in the splenic contour and contained mottled densities. After intravenous administration of contrast material a slight peripheral enhancement was noted. Magnetic resonance imaging demonstrated a sharply demarcated, hypointense mass, measuring 80x70 mm within the spleen (Figure 2). On T1- and T2-weighted images, the mass was heterogeneous, predominantly hypointense compared to the normal splenic parenchyma. No lymph node abnormality was detected by imaging studies. Under clinical preliminary diagnosis of malignant splenic mass such as lymphoma, surgery was performed. Splenic mass was not adherent or invaded to any surrounding organs. Partial splenectomy was performed. Intraoperative frozen section examination revealed IP and operation was terminated. Histopathology of the lesion was relatively well demarcated fibrosis like tissue with diffuse proliferation of spindle-shaped fibroblasts and local infiltration of inflammatory cells, mainly plasma cells, and with partial hyalinization and deposition of hemosiderin. Postoperative course was uneventful, and no recurrence was observed at 12 months follow-up.

DISCUSSION

Splenic tumors are relatively rare. They are mostly found during routine examination and imaging studies. Usually suspected splenic tumor is lymphoma when it is primary, and it is also the most common malignant tumor of spleen. Benign lesions of spleen such as hemangiomas and angiomas are seen less often than malignant lesions (1-3).

Inflammatory pseudotumor is a benign, reactive, and inflammatory process. IP is a rare entity which presents as a mass at various locations, including the respiratory tract, orbit, gastrointestinal tract and liver, however spleen is a rare location (1,4,5). First two cases of splenic IP were reported by Cotelingam and Jaffe in 1984 (6). Less than 100 cases have been reported in the literature until today. Vaughan presented a case of mesenteric IP in a teenager as a cause of abdominal pain (7).

Etiopathogenesis of IP still remains unknown but infection, vascular disease and immune disorders are blamed for causing IP. Presence of granulomas and giant cells increases suspect of infection as a cause. Some cases were reported to be due to Ebstein-Barr virus (EBV)

positive inflammatory follicular dendritic cell (FDC) tumors (8). As explanation of vascular hypothesis, intraparenchymatous hemorrhage secondary to trauma and coagulopathy was blamed for the formation of lesions. Cotelingam and Jaffe suggested the main initial event may have been a focal paranchymal necrosis with hemorrhage (6). High content of plasma cells in lesions supports immunological hypothesis. Takamoto assumes the mass resulted from the process of inflammation from cytokine induced by EBV infection (2).

IPs of spleen shows some resemblance to granulation tissue. IP should be distinguished from the IP like FDC tumor, which is consistently associated with EBV, and inflammatory myofibroblastic tumor (2).

Although recent advances in imaging studies, the exact diagnosis of focal splenic lesions may only be made after pathological examination of the spleen. Abscess, hemangioma, angiosarcoma, malignant lymphoma and hamartoma should always be considered in the differential diagnosis (9). The most commonly used imaging studies are computed tomography, ultrasonography and magnetic resonance imaging. Despite the aid of these studies, differentiation of IP from lymphoma or hamartoma may not always be possible (10). IPs of spleen may demonstrate various imaging patterns. Ultrasonography might show a partially calcified, well-defined echogenic mass or hypoechoic discrete lesions. Computed tomography reveals a low density mass in both unenhanced and enhanced studies. Magnetic resonance imaging might reveal a well-defined mass, isointense on T1-weighted images and hypointense or hyperintense on T2-weighted images with respect to the surrounding spleen (11).

Histopathological examination of needle biopsy specimen can reveal IP. But needle biopsy has uncertainness of detection of disease and complications such as hemorrhage and risk of metastases if mass is malignant. Therefore histological examination of resected specimens is the gold standard for diagnoses (9).

Laparoscopic splenectomy is the standard surgical procedure for management of most benign and malignant disease of spleen (3,12). This technique is well established and offers substantial advantages over the traditional open approach (13). Partial splenectomy was introduced for trauma and benign splenic diseases after recognition of fatal postsplenectomy sepsis. Partial laparoscopic splenectomy has the advantages of minimally invasive surgery and preservation of the immune function of the spleen (14). Uranues et al. reported that partial resection of the spleen is easier when done laparoscopically than with open technique (15).

In summary, preoperative diagnosis of IP is challenging and may be misdiagnosed as malignancy. Partial splenectomy may be sufficient for treatment. Laparoscopic surgery is proposed to be choice of treatment.

REFERENCES

1. Alimoglu O, Cevikbas U. Inflammatory pseudotumor of the spleen: report of a case. Surg Today 2003; 33: 960-964.
2. Takamoto K, Midorikawa Y, Minagawa M, Makuuchi M. Inflammatory pseudotumor of the spleen: clinical impact in surgical treatment. Biosci Trends 2007; 1: 113-116.
3. Janssen R, Geukens A, Brugman T. Hand-assisted laparoscopic splenectomy for a splenic hamartoma: two case reports. Acta Chir Belg 2008; 108: 254-257.
4. Yan J, Peng C, Yang W, et al. Inflammatory pseudotumour of the spleen: report of 2 cases and literature review. Can J Surg 2008; 51: 75-76.
5. Erkan N, Yildirim M, Yilmaz C, Yagci A. Inflammatory pseudotumour as an unusual cause of colonic obstruction: a case report. Acta Chir Belg 2004; 104: 462-464.
6. Cotelingam JD, Jaffe ES. Inflammatory pseudotumor of the spleen. Am J Surg Pathol 1984; 8: 375-380.
7. Vaughan KG, Aziz A, Meza MP, Hackam DJ. Mesenteric inflammatory pseudotumor as a cause of abdominal pain in a teenager: presentation and literature review. Pediatr Surg Int 2005; 21: 497-499.
8. Yamaguchi M, Yamamoto T, Tate G, et al. Specific detection of epstein-barr virus in inflammatory pseudotumor of the spleen in a patient with a high serum level of soluble IL-2 receptor. J Gastroenterol 2000; 35: 563-566.
9. Galindo Gallego M, Ortega Serrano MP, Ortega Lopez M, Esteban Collazo F, Guinea Esquerdo L. Inflammatory pseudotumor of spleen. Report of two cases and literature review. Minerva Chir 1997; 52: 1379-1388.
10. Dalal BI, Greenberg H, Quinonez GE, Gough JC. Inflammatory pseudotumor of the spleen. Morphological, radiological, immunophenotypic, and ultrastructural features. Arch Pathol Lab Med 1991; 115: 1062-1064.
11. Yano H, Imasato M, Monden T, Okamoto S. Inflammatory pseudotumor of the spleen: report of two cases. Surgery 2003; 133: 349-350.

12. Makrin V, Avital S, White I, Sagie B, Szold A. Laparoscopic splenectomy for solitary splenic tumors. Surg Endosc 2008; 22: 2009-2012.

13. Brunt LM, Langer JC, Quasebarth MA, Whitman ED. Comparative analysis of laparoscopic versus open splenectomy. Am J Surg 1996; 172: 596-599.

14. Vasilescu C, Stanciulea O, Tudor S, et al. Laparoscopic subtotal splenectomy in hereditary spherocytosis: to preserve the upper or the lower pole of the spleen? Surg Endosc 2006; 20: 748-752.

15. Uranues S, Alimoglu O. Laparoscopic surgery of the spleen. Surg Clin North Am 2005; 85: 75-90.