



## A Case Report: Lipomatous Hypertrophy of the Interatrial Septum

Olgu Sunumu: İnteratriyal Septumun Lipomatöz Hipertrofisi

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### Abstract

Lipomatous hypertrophy of the interatrial septum is a benign condition characterized by the deposition of fat into the interatrial septum. It is often mistaken for atrial masses and can be associated with conditions such as obesity, and steroid use. In this case presentation, we describe the computed tomography (CT) findings of an incidentally detected and asymptomatic case of lipomatous hypertrophy of the interatrial septum in an 81-year-old male patient with a history of nephrolithiasis. The patient underwent CT imaging, revealing a nodular thickening of the interatrial septum. Despite the presence of moderate cardiomegaly, the patient did not exhibit any symptoms related to the cardiac mass. Lipomatous hypertrophy of the interatrial septum is often asymptomatic but can rarely cause cardiac symptoms and arrhythmias. Differential diagnoses include other cardiac masses. Accurate diagnosis is crucial to avoid unnecessary surgery and to provide appropriate management. Diagnostic assessment involves multiple imaging modalities, such as echocardiography, cardiac CT, and magnetic resonance imaging (MRI) scans, with CT and MRI being particularly useful in characterizing the tissue properties. The recognition and understanding of lipomatous hypertrophy of the interatrial septum are important for radiologists to ensure accurate diagnosis and appropriate patient management.

**Keywords:** Lipomatous Hypertrophy Of The Interatrial Septum, Atrial Mass, Computed Tomography.

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### Öz

İnteratriyal septumun lipomatöz hipertrofisi, interatriyal septumda yağ birikmesiyle karakterize benign bir durumdur. Sıklıkla atriyal kitlelerle karıştırılır ve obezite, steroid kullanımı gibi durumlarla ilişkilendirilebilir. Bu vaka sunumunda, 81 yaşında, nefrolitiazis öyküsü olan bir erkek hastada, rastlantısal olarak tespit edilen ve semptomsuz interatriyal septumun lipomatöz hipertrofisinin bilgi-sayarlı tomografi bulgularını sunacağız. Hastaya yapılan BT görüntülemesinde interatriyal septumda nodüler kalınlaşma tespit edildi. Hastanın orta derece kardiomegali dışında, kardiyak kitle ile ilişkili herhangi bir semptomu yoktu. İnteratriyal septumun lipomatöz hipertrofisi genellikle semptomsuzdur ancak nadiren kardiyak semptomlara ve aritmilere neden olabilir. Ayırıcı tanı diğer kardi-yak kitleleri içerir. Gereksiz cerrahi önlemek ve uygun hasta yönetimini sağlamak için doğru tanı konulması hayati öneme sahiptir. Tanıda ekokardiyografi, kardiyak BT ve manyetik rezonans görüntüleme (MRG) gibi çeşitli yöntemleri içerir; BT ve MRG, dokunun özelliklerini karakterize etmede özellikle yararlıdır. İnteratriyal septumun lipomatöz hipertrofisinin tanınması ve anlaşılması, doğru tanı konulması ve uygun hasta yönetimini sağlamak için radyologlar için önemlidir.

**Anahtar Kelimeler:** İnteratriyal Septumun Lipomatöz Hipertrofisi, Atriyal Kitle, Olgu Sunumu, Bilgisayarlı Tomografi.

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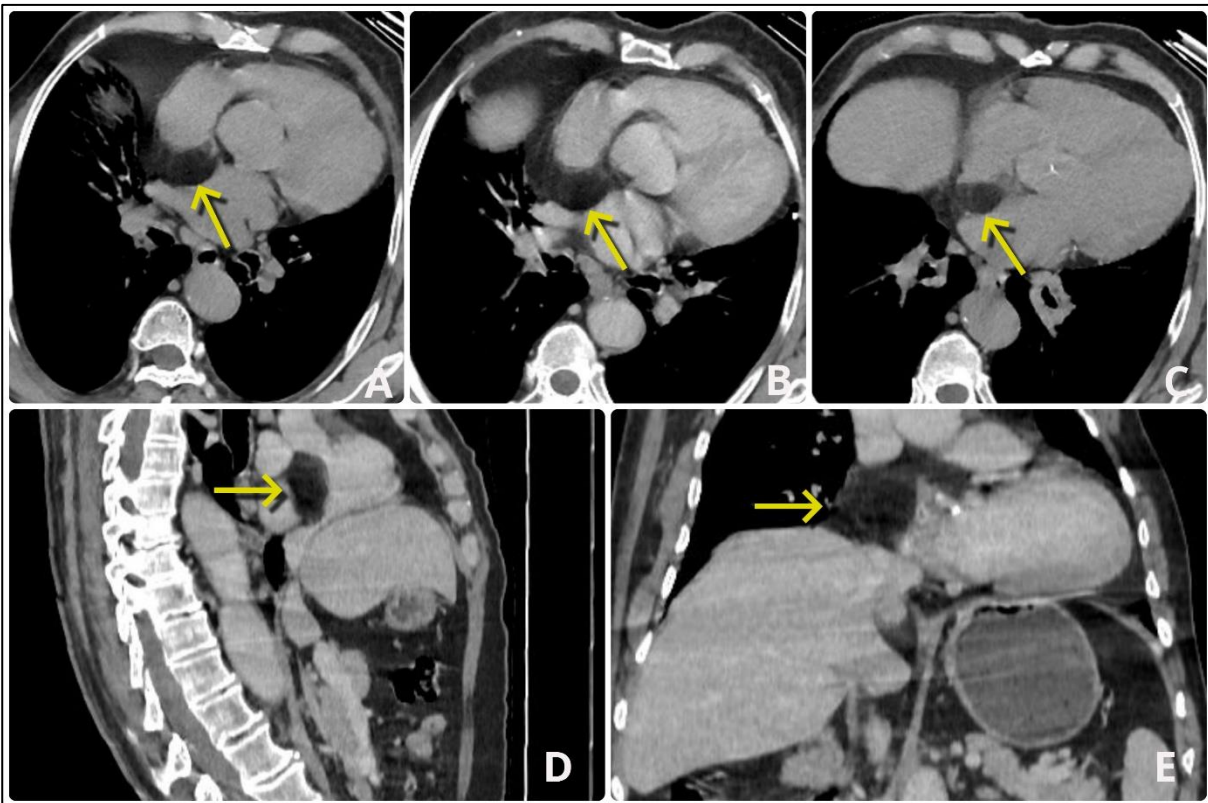
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## Introduction

Lipomatous hypertrophy of the interatrial septum is an entity was described in autopsy examinations in 1964 (1). It is characterized by non-capsulated, dumbbell-shaped infiltration of fatty tissue in the interatrial septum (2,3). To be considered lipomatous hypertrophy of the interatrial septum, the septum must reach a thickness of over 20 mm while preserving the fossa ovalis (4). With the frequent use of echocardiography, cardiac computed tomography (CT) imaging, and magnetic resonance imaging (MRI), it is increasingly recognized and tissue characterization can be done more clearly (1,3). In this case presentation, we aimed to increase awareness of this condition among radiologists by sharing an CT findings of incidentally detected and remained asymptomatic case of lipomatous hypertrophy of the interatrial septum, which can be mistaken for atrial masses. In this case presentation, we aim to raise awareness among radiologists about lipomatous hypertrophy of the interatrial septum by sharing CT findings of an incidentally detected and asymptomatic case. This condition can be mistaken for atrial masses.

## Case Presentation

Written informed consent was obtained from the participant for publication of medical records and images of the patient. An 81-year-old male patient with a history of nephrolithiasis underwent further evaluation with non-contrast and contrast enhanced CT imaging during his visit to the urology clinic due to macroscopic hematuria. The patient underwent extracorporeal shock wave lithotripsy (ESWL) in 2015 due to kidney stones. Abdominal CT scan is revealed a 12 mm stone in the right ureter at the constriction at pelvic brim and an atrophic right kidney. Urogram phase was delayed at the right kidney. Due to advanced age of the patient, he was recommended to be monitored for the ureteral stone. At the same time, a nodular thickening reaching 24 mm diameter with increased fat density at the level of the interatrial septum drew attention on the chest included in this examination (Figure). The patient had moderate cardiomegaly and did not exhibit any accompanying symptoms related to cardiac mass during cardiac examination and an electrocardiogram showed sinus rhythm.



**Figure 1.** Axial and multiplanar views of lipomatous hypertrophy of the interatrial septum on computerized tomography (CT) images. (A-C) Axial CT images, these images show the presence of fat density (low attenuation) within the interatrial septum. The yellow arrows indicate areas where the fat density is causing a mass effect on the adjacent cardiac structures. (D) Sagittal CT view provides a longitudinal perspective of

the heart, illustrating the extent of the lipomatous hypertrophy. (E) Coronal CT view is particularly useful for assessing the vertical extent and impact of the hypertrophy on the atrial chambers.

## Discussion

Lipomatous hypertrophy of the interatrial septum is a finding characterized by adipose tissue infiltration in the interatrial septum, which is believed to be associated with conditions such as obesity, steroid use, and emphysema, and is more commonly seen in women and older age groups (3). Although the incidence of lipomatous hypertrophy is not exactly known, the reported incidence in the literature varies between %1 to 8 (2,5). While lipomatous hypertrophy of the interatrial septum is a benign condition, it is important for radiologists to be aware of this entity to prevent unnecessary surgery and exaggerated diagnoses, as its differential diagnosis includes tumors such as lipoma, liposarcoma, myxoma, metastasis, rhabdomyoma, fibroma, and iatrogenic hematoma in cases with previous history of percutaneous coronary interventions. Recognizing this entity is important as it can be mistaken for atrial masses (4). Although lipomatous hypertrophy of the interatrial septum is mostly asymptomatic, when they originate from the atria, they can rarely cause premature atrial contractions, dyspnea, chest discomfort, right atrial obstruction, or even sudden cardiac death (4,5,6). The underlying mechanism of arrhythmia is not clear but there are hypotheses have been suggesting as a result of involvement of interatrial septum and right atrial wall which may distort the structure and conducting pathways (2,7). Surgical interventions like removal of the lipomatous mass or septal myectomy may be considered in severe cases with significant hemodynamic impairment or malignant arrhythmias (7). Diagnostic assessment of lipomatous hypertrophy of the interatrial septum involves multiple imaging modalities including echocardiography, cardiac CT or MRI scans. The initial evaluation often start with an echocardiography exam which provides valuable information regarding the location and size of the lesion, however it is not always possible to differentiate fat from the connective tissue on echocardiography. The initial evaluation often starts with an echocardiography exam, which provides valuable information regarding the location and size of the lesion. However, it is not always possible to differentiate fat from connective tissue on echocardiography (2,7). Therefore for further characterization of the tissue characteristics the role of cardiac CT and MRI is critical. Sparing of the fossa ovalis gives the lesion typical dumbbell-shaped appearance which makes the diagnosis easier (2).

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## Conclusion

Lipomatous hypertrophy of the interatrial septum is a relatively common, usually asymptomatic, benign condition that may mimic interatrial masses. The diagnosis is more frequently and easily made nowadays with the accelerating use of multimodality imaging techniques in which we are able to characterize tissue properties in daily clinical practice.

### List of Abbreviations

CT: Computed Tomography

MRI: Magnetic Resonance Imaging

ESWL: Extracorporeal Shock Wave Lithotripsy

**Informed Consent:** Written consent was obtained from the participants.

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