



## De Garengeot's hernia in a 72-year-old man: A case report 72 yaşında erkek hastada De Garengeot's hernisi: Olgu sunumu

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### Abstract

De Garengeot hernia is a very rare type of hernia. In this type of hernia, the appendix is found within the femoral canal. In this article, we aimed to share De Garengeot hernia which was diagnosed in a 72-year-old male patient. The patient was admitted to the emergency department with the complaints of right groin pain and swelling for 2 days. The patient was operated with a preliminary diagnosis of an incarcerated inguinal. De Garengeot hernia was detected during the operation. The patient underwent appendectomy. Then McVay procedure was performed and a mesh plug was placed in the femoral canal. Consequently, although it is very rare, it should be kept in mind that there may be an acute appendicitis within femoral hernia sac in a patient presenting with a painful mass in the groin. The necessary surgical procedure should be done immediately in order to reduce the risk of mortality and/or morbidity.

**Keywords:** Appendicitis; De Garengeot's Hernia; Femoral Hernia.

### Öz

De Garengeot's hernisi femoral kanalda appendiksin bulunduğu çok nadir görülen bir herni tipidir. Bu yazımızda 72 yaşında erkek hastada saptadığımız De Garengeot's hernisini paylaşmayı amaçladık. 72 yaşında erkek hasta 2 gündür olan sağ kasık ağrısı ve şişlik şikayetleri ile acil servise başvurdu. Yapılan fizik muayene ve tetkikler neticesinde inkarsere inguinal herni öntanısı ile opere edildi. Operasyon esnasında De Garengeot's hernisi olduğu saptandı. Appendektomi uygulandı. Ardından femoral kanala Mc Vay Onarım yapıp plug mesh konuldu. Postoperatif dönemde klinik ve laboratuvar olarak stabil seyreden hastanın gaz gaita deşarjı oldu. Postoperatif 2. günde önerilerle taburcu edildi. Patoloji sonucu akut apandisit ile uyumlu saptandı. Sonuç olarak kasıkta ağrılı kitle şikayeti ile gelen bir hastada çok nadir de olsa femoral herni kesesinde akut apandisit olabileceği akılda tutulmalıdır. Gerekli cerrahi girişimler ivedilikle yapılarak mortalite ve/veya morbidite riski azaltılmalıdır.

**Anahtar Kelimeler:** Apandisit; De Garengeot's Hernisi; Femoral Herni.

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## INTRODUCTION

De Garengeot hernia is a very rare type of hernia which was firstly described in 1731 by Rene Jacques Croissant de Garengeot. In this type of hernia, the appendix is found within the femoral canal(1). De Garengeot hernia was reported to occur in women at 93% by relating that femoral hernias are more common in women (2). In this article, we aimed to share De Garengeot hernia which was diagnosed in a 72-year-old male patient.

## CASE REPORT

A 72-year-old male patient was admitted to the emergency department with the complaints of right groin pain and swelling for 2 days. The patient stated that his pain has started around the navel 2 days ago and then has moved to the right groin. There were erythema and a hard and painful swelling on right inguinal region on his physical examination. He had nausea but no vomiting. In his past medical history, he had the history of the cardiac bypass 20 years ago and was taking coumadin. He stated that he had a swelling in the right groin with coughing and prolonged standing for last 1 year. The superficial and abdominal ultrasonography (USG) were performed with a preliminary diagnosis of an incarcerated inguinal hernia. On ultrasonography, the swollen bowel loops were extended from the right inguinal canal to the subcutaneous tissue in the right inguinal region and had no movement with valsalva maneuver, and also the free fluid was seen around it. Plain abdominal radiography was unremarkable. In the laboratory findings of the patient, WBC was 13700/mm<sup>3</sup> and other biochemical parameters were within normal limits. A strangulated inguinal hernia was primarily considered and then the patient was operated under emergency conditions. The inguinal region was reached throughout the right inguinal incision. It was found that the hernia sac had herniated into the subcutaneous tissue from the femoral canal. The hernia sac was opened and it was observed that the appendix was approximately 15 cm in length and its distal portion was erythematous, edematous and ischemic (Figure 1).



**Figure1.** De Garengeot hernia within the femoral hernia sac

Then the defect was slightly expanded and appendectomy was performed. The femoral hernia was repaired by McVay procedure and a mesh plug. In the postoperative period, the patient who remained stable as clinic and laboratory had a discharge of gas and stool. He was discharged with recommendations on the postoperative 2nd day. The result of pathology was consistent with acute appendicitis.

## DISCUSSION

The presence of the appendix vermiformis within the femoral hernia sac is rare and its incidence is about 5%. The presence of the acute appendicitis within the femoral hernia sac is very rare and its incidence is between 0.1-0.5% (3,4). Femoral hernia is rarely seen in men. In relation to this situation, it was reported that De Garengeot hernia was 13 times higher (93%) in women than men (2). In our case, both the presence of acute appendicitis within the femoral hernia sac and male gender have made it more interesting.

In a study performed in 36 patients by Kalles et al. (5), it was reported that 97% of patients were presented with a painful mass in the right groin. Similarly, the admission complaint of our patient was a painful mass in the right groin.

There are many theories about the pathogenesis of De Garengeot hernia. Congenital theory has been the most widely accepted. According to this theory, both the appendix vermiformis in the pelvic position and the rigid femoral ring predispose to the development of De Garengeot hernia(6-8).

Although the preoperative diagnosis of De Garengeot hernia is very difficult, it was reported to be diagnosed with a sensitivity and specificity of 98% by computed tomography (CT) (9). However, in another study made in 9 patients, it was emphasized that only 44% of patients were diagnosed by CT (5). Halpenny et al. (10) have suggested that magnetic resonance imaging is an alternative method. Konofaos et al. (11) noted that ultrasonography and CT could not change surgery decision in a patient who is clinically suspected strangulated hernia. In our case, only ultrasonography was performed in the preoperative period and the patient was operated with a preliminary diagnosis of an incarcerated inguinal hernia. The real diagnosis was made during the operation.

Thomas et al. made a diagnostic laparoscopy because they could not rule out other intra-abdominal pathology in a patient presenting with mass and pain in the right groin and they found that a large portion of the appendix vermiformis was located in the defect in the neighborhood of the right inguinal ligament. Hernia repair was made with right inguinal incision in the same patient after laparoscopic appendectomy. The authors emphasized that it can be seen and emptied without opening the hernia sac by this technique, and also that laparoscopy can also be used in the diagnosis and treatment(12).

There is not yet a standard treatment approach because it is rarely seen. Although some studies reported that a prolene mesh should be avoided to be used in the treatment of incarcerated inguinal hernias due to the risk of wound site infection, other studies reported that it can be safely placed even in case of intestinal necrosis and resection (6,13,14). In our case, the femoral canal was repaired by McVay procedure and a prolene mesh was placed on the femoral canal as a plug.

Consequently, although it is very rare, it should be kept in mind that there may be an acute appendicitis within femoral hernia sac in a patient presenting with a painful mass in the groin. The necessary surgical procedure should be done immediately in order to reduce the risk of mortality and/or morbidity.

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