

T Tube Revealing a Functional Biliary Obstruction in Cholescintigraphy

Case Report

Kolesintigrafide Safra Kesesine İlişkin Fonksiyonel Bir Engellenmeyi Açığa Çıkaran T-Tüp

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ABSTRACT

Hepatobiliary scintigraphy, with Tc-99m iminodiacetic acid analogs, is indicated for diagnosis of various acute and chronic hepatobiliary diseases. Cholescintigraphy often provides physiological and functional information on bile drainage in patients with suspected biliary obstruction and bile leakage. Important diagnostic information is gained after the assessment of blood flow to the liver, hepatic extraction, biliary excretion, patency of biliary tract and gallbladder contraction. We report cholescintigraphic findings of a patient with a T tube causing a functional biliary obstruction.

Key words: Cholescintigraphy, Biliary Obstruction, T tube

ÖZET

İminodiacetic asid örnekleriyle karaciğer ve safra yollarının sintigrafisi, çeşitli akut ve kronik karaciğer ve safra yolları hastalıklarının tanısını tanımlar. Kolesintigrafi sıklıkla sızıntı ve şüpheli safra ile ilgili tıkanıklıklarda hastaların dranjında fonksiyonel ve psikolojik bilgi sağlar. Ayrıca Hepatik ekstraksiyon, safrayla ilgili salgılama, safra alanının patensi, safra kesesinin küçülmesi, Karaciğere kan akış durumu sonrasında önemli tanısal bilgiler kazandırmaktadır. Bu çalışmayla; Bir hastaya ait safraya ilişkin fonksiyonel bir tıkanıklığın T-Tüp ile birlikte safra akışının azalması veya durması ile ilgili sintigrafik bulguları inceledik.

Anahtar Kelimeler: Kolesintigrafi, Safraya ait Tıkanıklık, T-Tüp

INTRODUCTION

Tc-99m iminodiacetic acid (IDA) radiopharmaceuticals have the same hepatocyte uptake, transport and excretion pathways as bilirubin. Once the Tc-99m IDA radiopharmaceutical is excreted from the hepatocytes and reaches the bile canaliculi it follows the physiologic flow of bile. Tc-99m mebrofenin, one of the (IDA) radiopharmaceuticals, is preferred in patients with hepatic dysfunction (1). The case presented here describes a patient with high bilirubin level after a Whipple procedure due to carcinoma of the duodenum.

CASE REPORT

A 72 year old male was admitted to the hospital with the complaints of intermittent diarrhea and back pain. He also had two episodes of melena and was anemic during the last year. Endoscopy and abdominal computed tomography (CT) results revealed malignant mass located in the first and second segments of duodenum.

He had surgery of Whipple procedure and a week later his bilirubin levels increased progressively. The ratio of total to direct bilirubin was 3.2/2.5.

T-tube cholangiography and cholescintigraphy were performed in order to show a possible bile leak. Neither of these imaging modalities revealed bile leak. Cholescintigraphy performed with Tc-99m mebrofenin showed normal blood flow, hepatocellular uptake. Intrahepatic bile ducts were visualized but extrahepatic bile ducts and enteric drainage were not seen during the dynamic and static images.

T tube appeared in the early phases of the study and persisted during the whole acquisition time (Figure 1)

After the second hour the T tube was clamped and a dynamic protocol was

restarted which lasted for 30 minutes. Extrahepatic bile ducts were visualized and enteric passage of the radiopharmaceutical was seen after clamping of the T tube. (Figure 2)

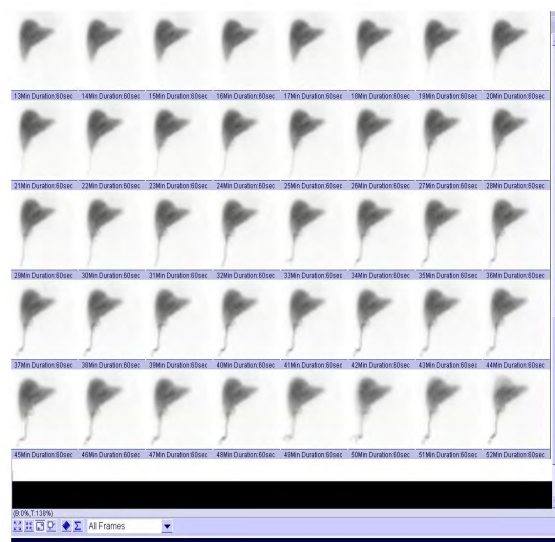


Figure 1: Cholescintigraphy using Tc-99m mebrofenin. One minute dynamic images were obtained. Good hepatocellular uptake visualization of the left hepatic bile duct and T tube with no bowel transit for an hour.



Figure 2: Bowel transit was apparent after clamping of the T tube.

DISCUSSION

Although the most common indication for Tc-99m IDA cholescintigraphy is to confirm or exclude acute cholecystitis, detection of biliary leak is among the wide spectrum of indications of this procedure. Cholescintigraphy also provides functional information about many surgical procedures involving the gastrointestinal tract (2,3).

Anastomoses and the loop patencies are also assessed by cholescintigraphy in patients who had Billroth and Whipple operations (4,5).

The usage of T tubes for internal biliary drainage is better than other polyethylene catheters having larger calibre, has better drainage and has less chance of cholangitis due to debris slugging within the tube (6).

However, internal drainage stents should be considered to be washed or replaced when a biliary obstruction is suspected (7).

In our case, the T tube inserted for an internal biliary drainage postoperatively caused a functional obstruction which was reversible and resolved spontaneously with bilirubin levels returning to normal. Hepatobiliary scintigraphy was very helpful in this case.

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