ABSTRACT
Moynihan’s or caterpillar hump of right hepatic artery (RHA) is a rare and unalarming but potentially catastrophic anomaly. Here, we report a case of acute on chronic cholecystitis with cholelithiasis presenting with this sinuous tortuosity, its surgical significance and safe surgery.

Keywords: Moynihan’s Hump; Caterpillar Hump; Right Hepatic Artery; Short Cystic Artery

INTRODUCTION
Variations in origin and branching pattern of RHA are numerous. Its tortuous course with upward and downward humps being quite rare, is known as Moynihan’s or caterpillar hump (Flint, 1923). This variant course of RHA invariably leads to abnormalities of cystic artery formation which can result into its injury during surgical procedures like cholecystectomy, liver transplantation, etc. (Prithi and Lakshmi, 2010). Injury to RHA leads to ischemic necrosis of right lobe of liver. To prevent this catastrophe strict follow up of safe surgical measures is required. We report a case of Moynihan’s hump of RHA confronted during a cholecystectomy. Its surgical significance and safety measures have been discussed.

CASES
A 25 years female patient, diagnosed to be having acute on chronic cholecystitis with cholelithiasis, was worked up and put on the operation list for cholecystectomy.
Case Report

During dissection a tortuous and dilated artery was found occupying Calot’s triangle (Figure 1). Alarmed by unusual appearance of “supposed to be cystic artery”, the course of the vessel was carefully traced in both directions and it turned out to be RHA. Originating from proper hepatic artery it ran down anterior to the common hepatic duct forming a typical sinusoid course and entered the Calot’s triangle. It had proximal loop facing upward and after entering the triangle it had another distal loop with large convexity facing to the right and downward. A short cystic artery arose from the apex of distal loop. The tiny cystic artery was gently hooked, doubly ligated and cut between the ligatures (Figure 2). Rest of the cholecystectomy was accomplished as usual.

Figure 2: Reconciled RHA after ligation & severing of cystic artery

DISCUSSION

There is very little information about etiology of Moynihan’s hump formation in the available literature. Taylor et al gave a possible explanation that the hepatic artery is more liable to become elongated and tortuous during cirrhosis. This may be because of underlying architectural distortion associated with corkscrewing of intrahepatic branches of hepatic artery (Taylor, 2013). Incidence of Moynihan’s hump of RHA varies from about 5 to 15% (Benson and Page, 1976). The tortuous artery may pass dorsal or ventral (noticed in present case) to the common hepatic duct. Former is more common. The hump may have single or double loop. Later is commoner. In double looped hump, cystic artery can arise either from proximal or distal loop. Origin from later is more frequent (Malik et al., 2010). Cystic artery, arising from proximal loop, is long and crosses over the tortuous RHA to reach the gall bladder while arising from distal loop it is very short owing to loop’s proximity to the gall bladder. Considering all above facts, this variant course of RHA is surgically significant as - (A) RHA may be mistaken as cystic artery and ligated (B) dissection and ligation of long cystic artery arising from proximal loop may result into underlying RHA’s injury. (C) short cystic artery arising from distal loop may be overlooked against RHA. Even if noticed by a vigilant surgeon, chances of its avulsion are high if
excessive traction is applied on the gall bladder or during its hooking and ligation. (D) sometimes tortuous RHA does not give a single cystic artery but supplies the gall bladder with several small twigs. RHA injury is threatened while securing them (Malik et al., 2010).

Some of the safety rules, if followed, during cholecystectomy may help surgeons avoid complications with Moynihan’s hump right hepatic artery. They are – (1) freeing the infundibulum first to widen the Calot’s triangle so that piled up structures fall apart (2) tracing up the “appearing to be” cystic artery, right up to the gallbladder wall before its ligation (3) always dissect and ligate cystic duct and artery separately (4) keep close to the gallbladder while dissecting Calot’s triangle (5) excellent illumination of operative field and perfect control of bleeding during dissection improves visibility, hence must be ensured. (6) above all, anomalies of biliary tree and vessels are so numerous that each cholecystectomy should be considered a new procedure and strict vigilance should be paid to it.

REFERENCES