CA 19-9 in Obstructive Jaundice: A Common Confounder

Rudrajit Paul
Associate Professor, Department of Medicine, Midnapore Medical College, Medinipur, West Bengal

Sir,

Carbohydrate antigen 19-9 (CA 19-9) is a blood biochemical marker that is used in medical oncology in treatment and follow up of many abdominal malignancies like pancreatic and periampullary cancer. However, some benign abdominal pathologies may also cause significant rise of this marker in blood.[1] This high value may be misinterpreted and hence, may lead to unnecessary investigations.[1]

A 67 year old man with chronic alcohol addiction presented to the clinic with chronic epigastric pain for one month. He was treated for gastritis earlier, with no relief of the pain. Also, an ultrasonography of the abdomen was done outside which showed coarse echotexture of liver with dilated common bile duct (CBD). The pancreas was normal. As a part of this investigation, a CA19-9 level was also done which came as 5685 IU/L (N<35). The patient himself consulted the internet for interpretation of this report and had the impression that he had developed cancer. He came to the clinic in a highly anxious state.

On examination, there was mild epigastric tenderness with 2 cm hepatomegaly. The patient was jaundiced and had scratch marks of pruritus all over the body. His liver function test revealed bilirubin of 6.7 mg/dl with direct fraction of 5.8 mg/dl. SGOT/SGPT/ALP were 117/84/448 IU/L respectively. A repeat ultrasonography was done as an emergency which showed dilated biliary radicles in liver with dilated proximal part of CBD. The distal part of CBD and pancreas could not be seen due to gas shadows. The patient was taken for MDCT abdomen which showed a calculus lodged in distal CBD; no other mass was present. The patient was taken up for ERCP with stenting.

The extraction of the CBD stone by ERCP was done without any complications. His bilirubin levels came down after the procedure. CA 19-9 level was 1200 IU/L, 7 days after the procedure and 16 IU/L, 21 days after the procedure. At three months' follow up, he is asymptomatic now, with all blood tests in the normal range.

CA 19-9 is a tumour marker for pancreatic and biliary cancer. But its main utility is for follow up.[2] The elevation of CA 19-9 in benign conditions reduces its sensitivity for diagnosis of cancer.[1] However, after therapy of pancreatic cancer, CA 19-9 has high sensitivity and specificity in detecting recurrence.

Benign hepatobiliary diseases, as in our patient, is one, often neglected, cause of raised CA 19-9.[1] CA 19-9 is a mucin glycoprotein that is present in miniscule quantities in the bile and pancreatic secretions of adults. Cholangitis and other causes of biliary obstruction rapidly raise the CA 19-9 levels.[1] Usually, the degree of elevation is more for malignant pathologies than benign diseases. But sometimes, benign conditions can also cause dramatic elevations of the CA 19-9 blood levels. A case of choledocholithiasis was reported from Greece where the CA 19-9 level was almost 100000IU/L.[3] However, after surgery, the levels fell by more than 99% within two weeks.[3] Similar rapid decrease was also seen in our patient.

The exact reason for elevation of CA 19-9 levels in benign biliary diseases is not known. There are several postulated hypotheses like leakage of CA 19-9 from biliary tracts into blood and enhanced production of CA 19-9 in biliary epithelium due to local inflammatory cytokines.[3]

We report this case in order to sensitize clinicians to the false positive result of CA 19-9 in the detection of pancreatic cancer. A recent study from China has also found that CA 19-9 was elevated in many benign hepatobiliary disorders and hence, its value as a marker for diagnosis of cancer was limited.[4] The American society of clinical endocrinology also currently *discourages* the use of this tumour marker for screening.[4]

Thus, in a suspected pancreato-biliary disease, tumour markers like CA 19-9 should not be tested initially. A false high value can confound the diagnostic pathway and lead to unnecessary anxiety, as in our patient.

References

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