No ascites, pleural effusion or locally enlarged lymph node (peri-pancreatic and para-aortic) was found sonologically. The sonological diagnosis was space occupying lesion (SOL) in the left lobe of the liver with extension into the portal vein (? Portal vein thrombus) and splenomegaly. The patient further underwent a tri-phasic CT scan of whole abdomen, serum α- fetoprotein, HBsAg, upper GI endoscoppy. The tri-phasic abdominal CT scan revealed cirrhotic liver with left lobe SOL- likely to be HCC, thrombus in PV, mild splenomegaly and dilated splenic vein. His AFP was found extremely high - 17484 ng/ ml (~ 14512 IU/ ml). He was tested negative for HBsAg and his upper GI endoscopy showed Grade II oesophageal varices with erosive gastritis. All these findings of latter investigations were correlated with our sonological findings and the ultimate diagnosis was- Macroscopic malignant portal vein thrombus in a rapidly progressing case of HCC.

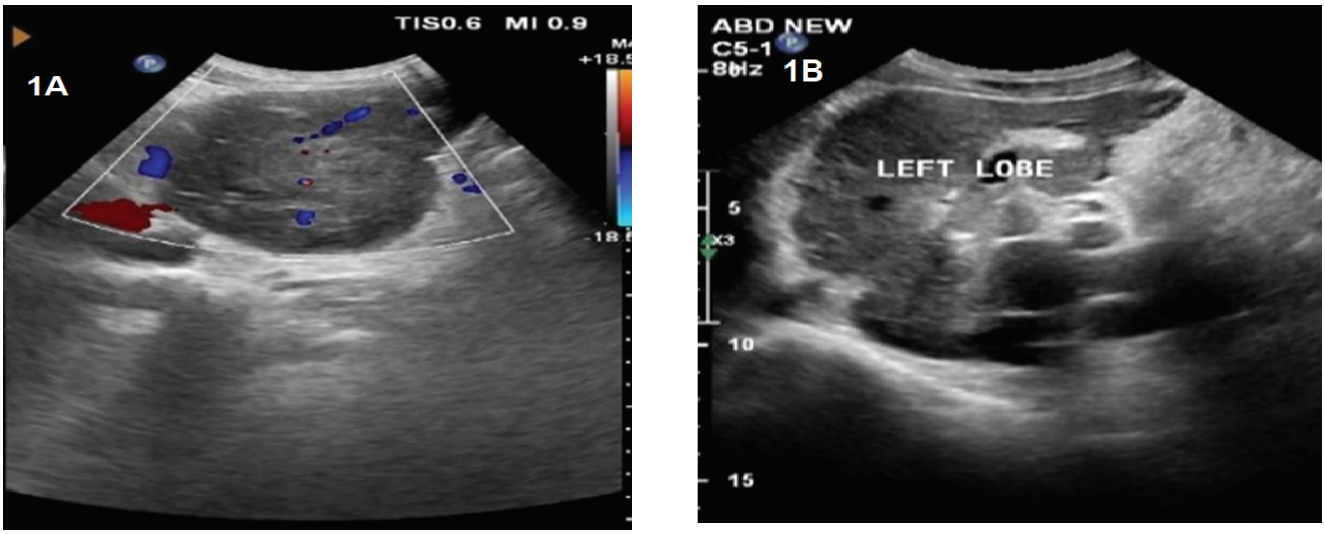

Figure 1A: A mixed echogenic left lobe hepatic mass, 1B: Left lobe liver mass appeared to be continuous with portal vein at its confluence extending up to its branches

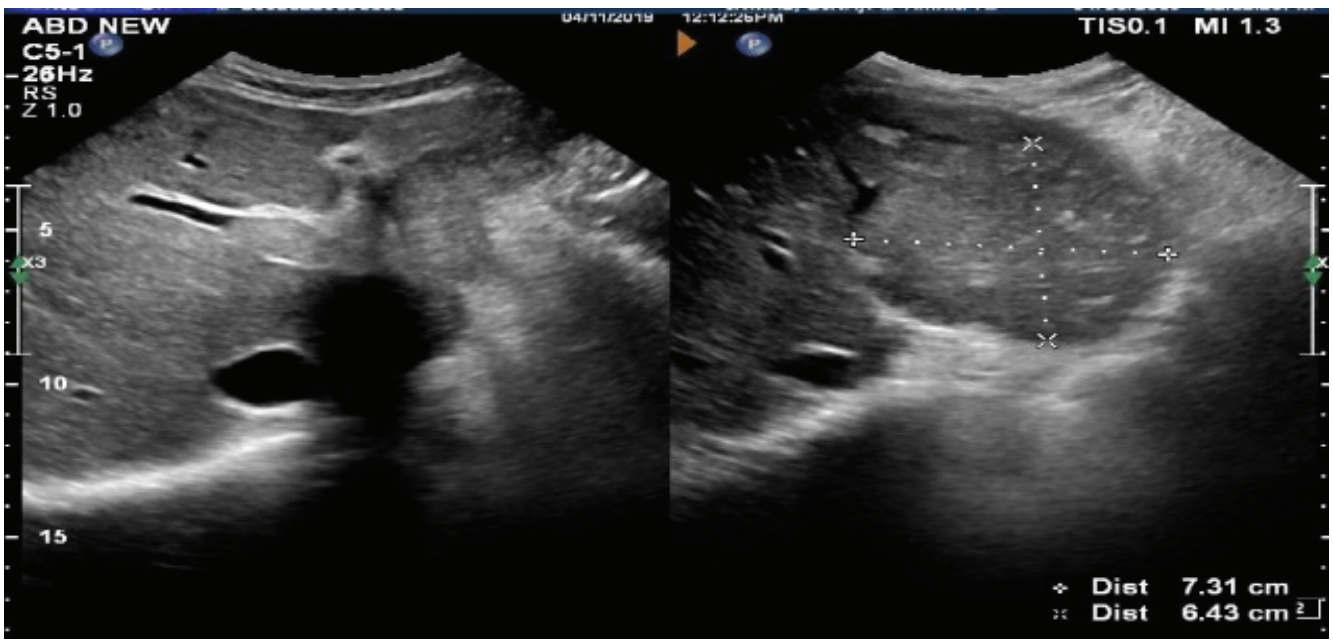

Figure 2: A mixed echogenic mass in left lobe of liver

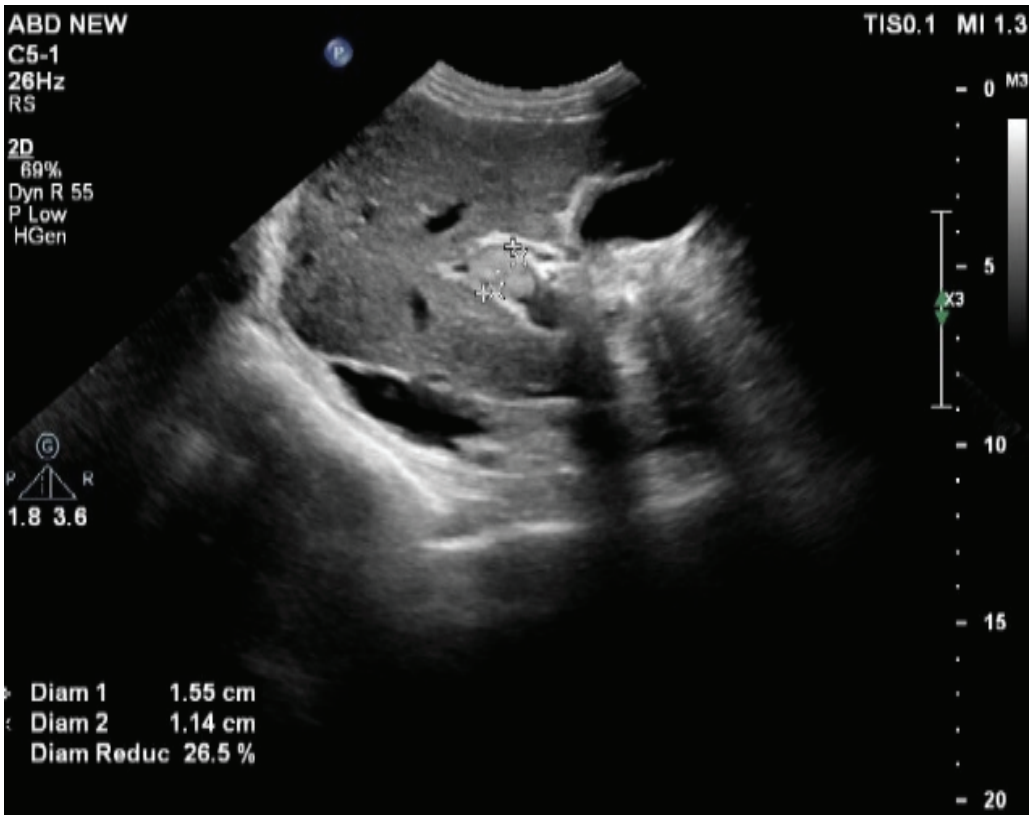

Figure 3: Dilated portal vein having thrombus within

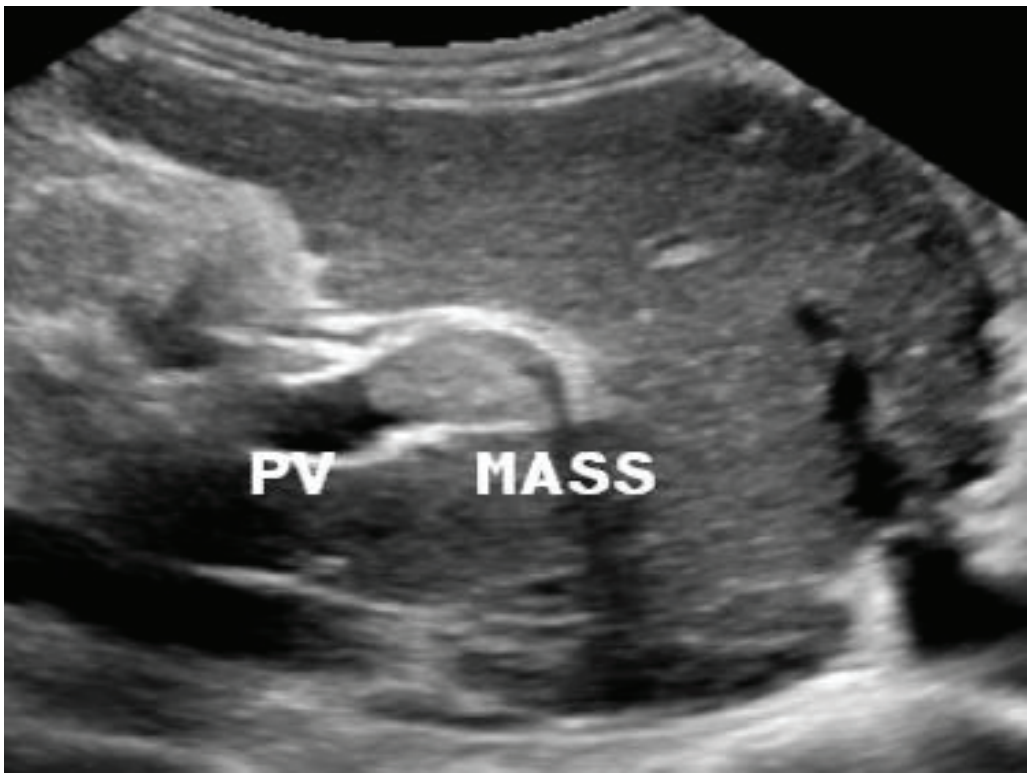

Figure 4: Dilated portal vein having thrombus within

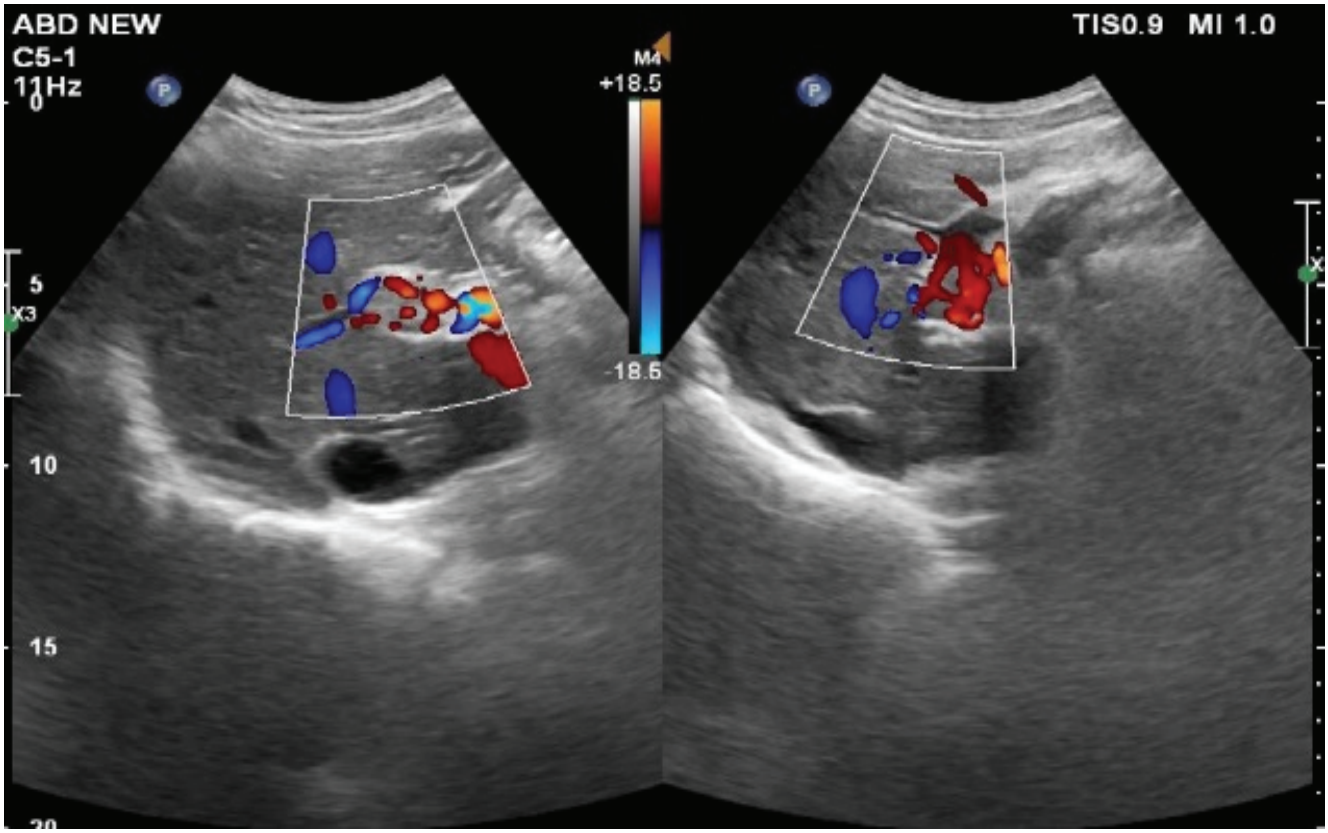

Figure 5: Doppler showing increased flow pattern in and around the portal vein thrombus

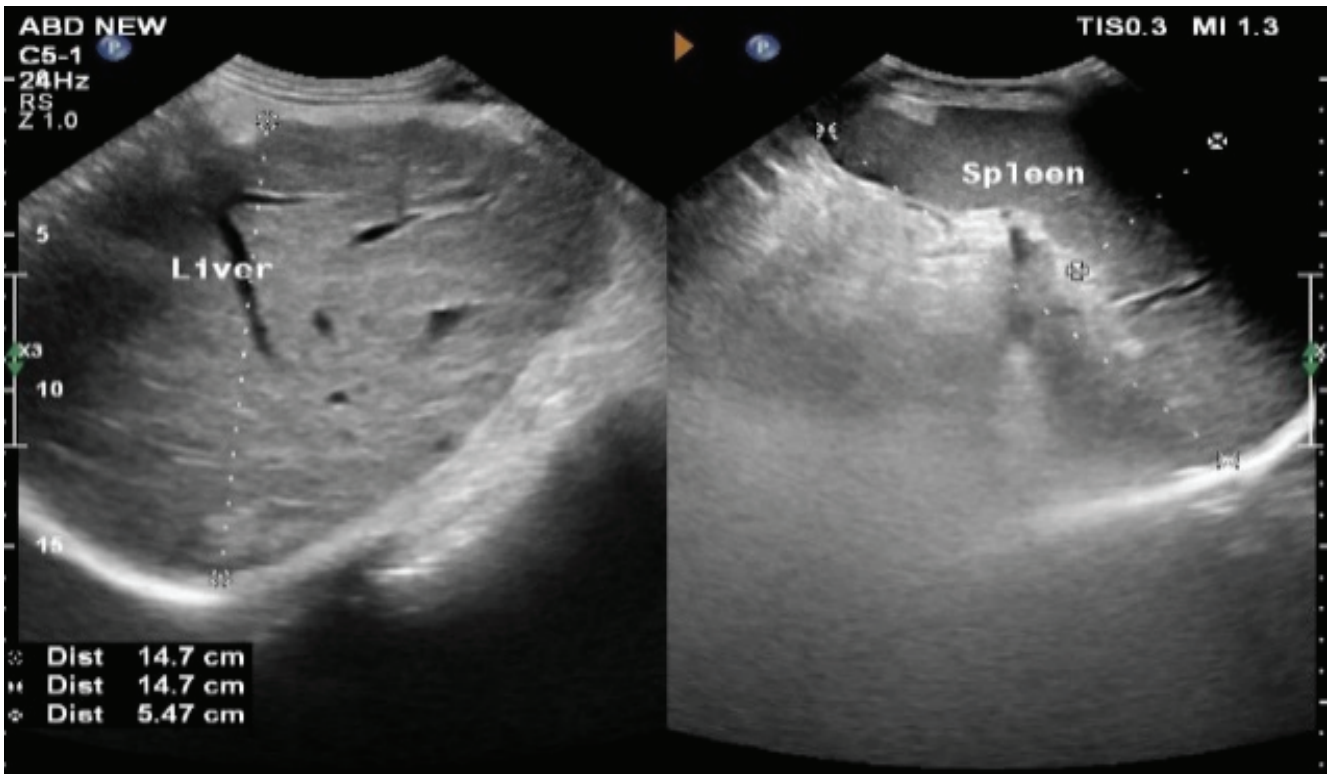

Figure 6: Normal sized liver with an enlarged spleen

DISCUSSION

Tumour thrombus has significant importance in tumour staging (TNM staging) and planning further treatment options. Contrast enhanced ultrasound is 100% sensitive and specific to diagnose such intra-vascular metastatic deposit. Post-contrast enhancement of such lesion or flow within the thrombus on Doppler is considered as sonological hallmark of portal vein tumour thrombus. Other various imaging techniques like Radiological - CT, MRI, angiography as well as molecular imaging - FDG PET, have significant role in non-invasive diagnosis of tumour thrombus and these modalities have their own different diagnostic criteria(3).

The prevalence of PVT is more frequent in HCC than in cirrhosis of liver. Kayar et al., showed that in case of cirrhosis the prevalence is about 1 - 5.7% (4) whereas in HCC up to 70% cases have PVT occurrence either by direct venous extension or by metastasis (5). And about 45% of HCC patients may have macroscopic malignant PVT (6-9).

It is very important to differentiate between a bland PVT and a tumour PVT as these have great significance in tumour staging and setting the treatment plan. The key differentiating features are thrombus neovascularization, marked venous expansion and most significantly the contiguity of thrombus with parenchymal HCC mass (10).

Akkiz et al., demonstrated in their research, the frequency of PVT is more among the HCC patients with higher maximum tumour diameter (MTD). In addition to that, AFP values are always significantly higher (>100 IU/ml) in those HCC patients with macroscopic malignant PVT (11). In such cases of HCC patients having macroscopic malignant PVT along with high AFP values have very poor prognosis and therefore, these two characteristics combined are considered as absolute contraindication for any surgical resection and liver transplantation which are the mainstay of curative treatment for HCC(3).

If the non-invasive imaging techniques are not conclusive enough to specify the PV tumour thrombus, a cytopathological assessment is always confirmatory for the diagnosis (12,13). Transcutaneous ultrasound guided FNA is not generally practiced for such assessment because of safety issues and other technical difficulties (8). Rather endoscopic ultrasound (EUS) guided FNA is more preferable because of its easy application, safety and higher success rate(12,14).

CONCLUSION

In conclusion, we reported a case of macroscopic malignant portal vein thrombus in a rapidly progressing HCC patient with extremely high AFP level signifying very poor prognosis.

The abdominal CT scan facilities, particularly the tri-phasic CT, are still not very much available in all parts of the Bangladesh, specially the peripheral rural areas whereas the ultrasound facilities are relatively more accessible in those areas. Therefore sonological determination of portal vein thrombosis in HCC patients plays an important role for the preliminary diagnosis in those remote districts of the country.

Conflict of Interests

The authors claim no conflict of interests.

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Discharging Sinus over the Anterior Abdominal Wall : A Case Report

Mohammad Sazzad Hossain[1], Noor-E-Amrin Alim[2], Pabitra Kumar Bhattacharjee[1], Abdullah Al Persi[3], Muhammad Farhan Muhtasim[3], AHM Roquibul Hoque[4]

Sinus tracts are abnormal connections between a fluid collection and mucosal surface and /or skin, resulting from an acute or chronic process. Reported case is of a 50 years old male, who presented with a non healing discharging sinus tract in abdominal wall at the port site following laparoscopic appendicectomy about 6 months back. Patient visited Ultrsound and Color Doppler division of Institute of Nuclear Medicine & Allied Sciences (INMAS), Chattogram and abdominal ultrasound helped to diagnose and treat accordingly. Proper sterilization of the laparoscope instruments is of utmost importance in preventing infectious complications.

Keywords: Sinus, Anterior abdomen, Ultrasonography, port site Tuberculosis

Abdominal sinus tract is one of the most challenging clinical conditions in any abdominal or laparoscopic surgery. An abdominal wall sinus tract is an infectious fibrous blind channel that leads to the skin, with or without extension into the abdominal cavity. It is a troublesome complication that occurs mainly after hernia and abdominal wall surgery. The rate of infection is influenced considerably by underlying co-morbidity and seems to be increased in patients with diabetes, immune-suppression or obesity. A clinician should strongly consider the possibility of a sinus tract infection in any patients who present with symptoms and /or sign of inflammation of the abdominal wall in the area of incision, fever of unknown etiology or other less common clinical manifestation of such as an enterocutaneous fistula or abdominal abscess in the area of mesh. Imaging techniques including ultrasound and /or computerized tomography can be useful for the diagnosis of sinus tract infection. On Ultrasonography, it appears as a linear hypoechoic tract in abdominal wall, with extension of tract into abdominal cavity.

CASE REPORT

A 50 years old male presented with a non healing discharging sinus tract in abdominal wall at the port site who underwent laparoscopic appendicectomy 6 months back. He presented with an opening in right lower abdomen with semi-transparent, thick discharge oozing out from the site. Physical examination revealed the patient to be well built, afebrile, normotensive with no history of Diabetes. Patient got COVID-19 vaccination completed with history of positive disease 10 months earlier which subsided without any complications. Abdominal examination showed a small opening in the right lower abdomen that looked like an actively discharging sinus in the port site close to right iliac fossa. Discharge was seropurulent in nature. Surrounding skin showed redness around the opening of the sinus. Other systemic examination was essentially normal. Lab investigations were unremarkable with high ESR, which was 54 mm after one hour.

1. Chief Medical Officer, 2. Senior Medical Officer, 3.Medical Officer, 4. CMO & Director
Institute of Nuclear Medicine & Allied Sciences (INMAS), Chattogram
Correspondence Address: Dr. Mohammad Sazzad Hossain, Chief Medical Officer, Institute of Nuclear Medicine & Allied Sciences (INMAS), CMCH Campus, Chattogram. Email: sazzad_hossain1973@yahoo.com

Ultrasound of abdomen and pelvis revealed a linear hypoechoic tract in right lower abdomen lateral to right iliac fossa measuring about 31 X 7mm with 5 mm distance from the skin. The tract was seen exteriorly up to parietal wall of peritoneum and appeared to be communicating with the abdominal cavity. Bedside collection of the discharge was readily done and sent for culture. with evidence of acid fast bacilli and Gene Xpert was also done for confirmation of the diagnosis. Decision was taken to start anitubercular drugs. There was no improvement after 3 months, and then sinus tract was removed surgically and confirmed this was a case of multi drug resistant tuberculosis (MDR-TB). After 1 month of modified anti-TB therapy, there was evidence of healthy scar with no discharge from the sinus.

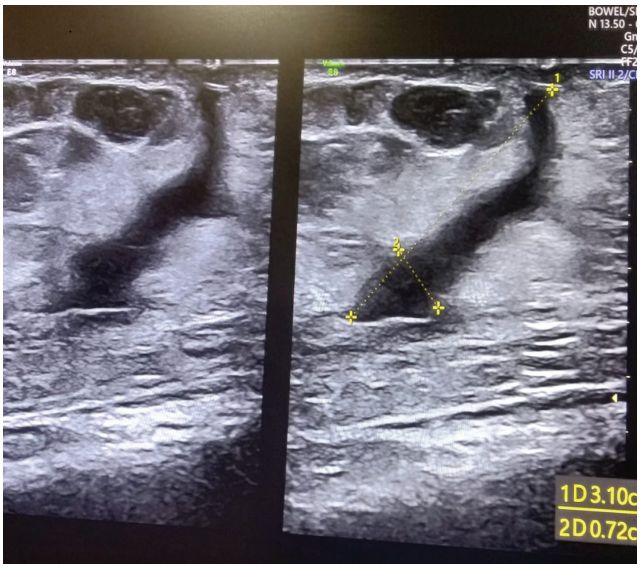

Figure 1: Ultrasound images of the discharging sinus over the anterior abdominal wall shows linear hypo echoic tract in abdominal wall and also extension of tract into abdominal cavity

DISCUSSION

Port site tuberculosis is a rare complication of laparoscopic surgery. It is usually a nosocomial infection caused by incompletely sterilized laparoscopic instruments (1).The organism is most cases is Mycobacterium fortuitum, an atypical mycobacterium that colonizes in soil and tap water. Its incubation period is 3-4 weeks and presents as port site infection after 1 month of surgery (2). Various factors responsible for causation of the infection are:

A . Improper instrument cleaning leading retained clots

B. Sterilization of reusable laparoscopic instruments with 2% glutaraldehyde for 20 mins that achieves disinfection, but not sterilization(3)

C. Rinsing instruments with boiled tap water that is source of tubercular infection (4)

Following are the recommendation to prevent port site tuberculosis:

A. Thorough mechanical cleaning of instruments by ultrasonic technology

B. ETO gas sterilization or gas plasma sterilization of instruments is better than glutaraldehyde (5)

C. If glutaraldehyde is used, 3.4% solution should be used for 8 to12 hr for sporicidal action

D. Metallic cannulas should be autoclaved or use disposable port cannulas

E. Use autoclaved water for rinsing instruments

Early diagnosis of port site tuberculosis is possible only with high index of suspicion. If this possibility is kept in mind in cases of nonhealing/ recurrent sinuses after laparoscopic surgery, some of the recent diagnostic tests are helpful in confirming the diagnosis.

The gold standard for diagnosis of tuberculosis is demonstration of acid-fast bacillus under microscope, but only 50% of the cases are smear positive (6).

In view of the explosive increase in laparoscopic surgery, there is concern about the effectiveness of

the sterilization of reusable laparoscopic instruments by immersion in 2% gluteraldehyde. There is conflicting information in the literature regarding the effectiveness of a 20-minute instrument soak in 2% gluteraldehyde to clear Mycobacterium tuberculosis. In the light of the preceding information, the current practice of gluteraldehyde disinfection for reusable laparoscope needs to be re-examined (7). Thus proper sterilization of the laparoscope and instruments is of utmost importance in preventing infectious complications and ideally, autoclaving should be used for this purpose (1).

In this case the source of infection was most probably the laparoscope and its accessories. Hence it is recommended to take the utmost care and follow the proper technique of sterilization of laparoscopic instruments.

Recently Gene Xpert MTB/RIF has been introduced that is self contained cassette based test which does not require intensive training or advanced laboratory facilities and gives results within 2 h. Importantly it is highly specific and is able to diagnose 98.2% of smear positive and 72.5% of smear negative, culture positive patients (8).Crucially, it correctly identified 97.6% of rifampicin resistant bacilli. This holds considerable potential and could potentially even replace standard smear microscopy. WHO has recommended this test as the first line test in individuals suspected of having MDR-TB or HIV associated TB and as a follow on test for smear negative samples in other patients (9).

CONCLUSION

Port site tuberculosis is not common and sometimes its diagnosis is challenging and ultrasound can play a crucial role when not responding to conventional treatment; proper sterilization of the laparoscope and instruments is of utmost importance in preventing infectious complications.

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