SELF ASSESSMENT ANSWERS

A man with drowsiness and abdominal pain

Q1: What is the diagnosis?

The diagnosis is heroin overdose because of the inadvertent rupture of packages after body packing or body smuggling.

Q2: What are the radiological abnormalities seen?

Radiography of the abdomen shows multiple rectangular shaped foreign bodies with air trapped at both ends. This finding in a patient where illicit drug overdose is suspected suggests body packing; this was confirmed by computed tomography. The advantage of this modality was that we were able to count the number of packages and determine the segments of gastrointestinal tract in which they were present. The apparent inability to see most of the packages on plain radiography suggests that it is easy to miss this diagnosis if only radiographs are relied upon.

Q3: What are the management options?

Conservative management includes careful observation, continuous whole bowel irrigation with polyethylene glycol (15–20 ml/kg/hour), and use of laxatives. It is generally accepted that absolute surgical indications are: suspicion of leak, obstruction in the proximal digestive tract, persistent intestinal obstruction, and lack of progress during conservative treatment.

Discussion

This is a classic example of ''body packing''. This refers to the act of swallowing packages containing illegal drugs, for the purpose of smuggling. A variant of this increasingly seen condition is ''body stuffing'' where illegal drugs are ingested urgently for concealment when confronted by the authorities.[1]

''Body packers'' or ''mules'' have a history of travel and are usually found in airports or at border crossings. They usually carry high profit drugs like cocaine or heroin, which are carefully packed in high grade latex, aluminium foil, or condoms to avoid leakage. Each packet contains large quantities of the drugs, hence rupture of a single package may be fatal. Intestinal obstruction by the packages is a frequent complication, which is compounded by the use of antimotility agents like loperamide by the body packers. Radiographic examination is very useful in diagnosis, as in this case.

In contrast, body stuffers are encountered on the street, in drug raids, or when being arrested for any other charge. They may be seen consuming the drug, which can be anything (heroin, cocaine, sedatives, hallucinogens, etc). More than one drug may be involved. The packaging is loosely wrapped paper or foil. The high risk of early mortality is secondary to frantic attempts to ingest these materials and can result in upper airway or oesophageal obstruction causing respiratory compromise or pulmonary aspiration. Radiology is usually not very helpful in diagnosis.

Both body packers and body stuffers invariably deny drug ingestion for fear of prosecution. Diagnosis depends on a high index of suspicion in cases of clinical symptoms and signs of drug overdose in patients with a recent history of travel, especially when they deny substance abuse, as in this case. In patients without evidence of drug toxicity diagnosis depends very much on radiology. The abdominal radiograph is the most important diagnostic tool, although a false negative rate has been reported as 20%.[2] Our case also illustrates the usefulness of a cross sectional modality compared with plain radiography. Since most of the packages were not visible on plain radiograph, computed tomography was used to follow the progress of packages and evaluate the completeness after surgery.

Because latex gloves, balloons, and condoms have been replaced by mechanically produced and carefully sealed multilayer latex packages for the drugs, most patients in the past decade have presented with abdominal discomfort, nausea, or other symptoms caused by obstruction. This has led to conservative management in place of the earlier advocated surgical management in all patients when they present with symptoms of intoxication.[3] Treatment of this condition therefore depends on the signs and symptoms. It is strongly recommended that the poison control and information centre should be contacted in all cases, to help coordinate the management.

A new grading system has been reported for management, as follows[4]:

- Grade 1: no signs and symptoms. Use laxatives/suppositories and observe.
- Grade 2: abdominal pain and nausea. No clinical signs. Treatment is as above, but close monitoring essential.
- Grade 3: patient develops bowel obstruction and there is failure of the packages to progress. Package rupture is imminent but there are no signs of drug toxicity. Besides the above mentioned measures nasogastric suctioning is recommended especially if there is vomiting. From this stage on it is preferable to monitor the patient in the intensive care unit. Semiurgent surgery for removal of the packages is recommended.
- Grade 4: patient has severe abdominal pain and/or signs of drug overdose, including altered sensorium. Besides the above measures, resuscitation, administration of antidote, and immediate surgery are recommended.

Endoscopic removal of the packages is contraindicated because of risk of rupture of the packages with large doses of drug.[5]

Our patient had surgery and 21 packages were removed from his stomach. Two packages were found to be ruptured, which most likely caused the clinical presentation. Postoperative computed tomography showed one package still remaining in the stomach. Although endoscopic removal has been considered risky, it was successfully retrieved by gastroscope because of the patient's postoperative status and the failure of peristaltic progression to the small bowel. The remainder was passed per rectum with the use of enemas, intravenous metaclopramide, and whole bowel irrigation with polyethylene glycol (via nasogastric tube at the dose of 15 ml/kg/hour). He required ventilatory support for five days and recovered well.

Final diagnosis

Heroin overdose caused by body packing.

ACKNOWLEDGEMENTS

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References

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Painful knee

Q1: What are features seen on MRI (see p 556)?

The T2-weighted coronal image shows a well defined oval shaped, homogenous, multiseptated high signal intensity lesion adjacent to the lateral margin of the lateral meniscus. The lesion is lying deep to the iliotibial tract.

Q2: What are the differential diagnoses?

The differential diagnoses include lateral meniscus cyst, pes anserinus bursitis, bursitis of the lateral collateral ligament, and lateral meniscus injury.

Q3: What is the diagnosis?

The fluid filled multiseptated cystic lesion-like appearance on the MRI is consistent with a left anterolateral multiseptated paramenisical cyst arising from the lateral meniscus. T1-weighted images confirmed the same.

Q4: What is the frequently associated finding with this condition?

Lateral meniscus cysts are usually associated with horizontal cleavage tears of the meniscus.

Q5: How should the condition be managed?

Asymptomatic meniscal cyst can be treated non-operatively. Symptomatic cysts need partial menisectomy along with decompression of the cyst either arthroscopically or by an open method.

Discussion

This young woman was suspected of having a meniscal cyst and hence had the MRI investigation. The T2-weighted coronal images (shown in fig 1; see p 556) clearly demonstrated the fluid filled multiseptated cystic lesion arising from the rim of the meniscal attachment. She underwent arthroscopic treatment to her left knee. Arthroscopy revealed a horizontal cleavage tear of the lateral meniscus, which was trimmed along with decompression of the cyst. At three

months of follow up she is completely pain free.

Meniscus cysts are quite rare and the reported incidence in the literature varies from 0.3% to 7% of meniscal lesions in general.[1 2] The main associated feature is the horizontal cleavage tear of the meniscus, which acts like a flap valve during knee movements. The aetiopathogenesis is unclear, however a male predominance is noted and it is seen in a wide age group. Meniscus cysts are also seen sometimes in patients with discoid meniscus. The typical feature is a palpable cystic mass along the joint line associated with pain, which characteristically becomes more prominent at 15 to 30 degrees of flexion and disappears at full extension and flexion greater than 90 degrees. Plain radiographs are usually normal and MRI is diagnostic.

Final diagnosis

Lateral meniscus cyst.

References

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