

## RECURRENT PLEURAL EFFUSION

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### Case Report

A 42-year-old lady was referred for investigation of recurrent right pleural effusions over a six month period. A computed Tomography (CT) was requested to outrule an underlying malignancy. The patient had a known history of chronic renal failure, for which she was treated with peritoneal dialysis for the previous four years.

A non-contrast CT thorax was performed in which revealed bilateral pleural effusions more significant on the right side with fluid in the transverse fissure and interstitial oedema; features consistent with fluid overload (Fig. 1A). On the images of the upper abdomen, there was free fluid present, with curvilinear calcification of the peritoneum (Fig. 1B). A diagnosis of sclerosing peritonitis secondary to peritoneal dialysis was made (Fig. 2). The fluid overload was felt to be due to inadequate peritoneal dialysis due to the sclerosing peritonitis.

### Discussion

Sclerosing peritonitis (SP) is a complication of peritoneal dialysis that is felt to be under-diagnosed and may occur in up to 20% CAPD patients. It is an inflammatory condition of the peritoneum, resulting in proliferation of fibroconnective tissue and peritoneal calcification. This results in defective diffusion and ultrafiltration across the peritoneal membrane, which acts as the semi-permeable membrane in the mechanism of peritoneal dialysis. As result, there is inadequate removal of toxins and fluid overload, which in this case was manifested by a pleural effusion.

Presentation is usually with abdominal discomfort or weight loss but it can vary between patients. Abdominal radiographs may demonstrate curvilinear calcification and complications such as dilated loops of bowel and thumbprinting (Fig. 3).

Ultrasonography is not sensitive but may demonstrate dilated loops of bowel surrounded by a hypoechoic thick fibrous membrane, and loculated ascites (1). CT is more sensitive, which may demonstrate peritoneal

thickening, enhancement or calcification (2). Diagnosis can also be made histologically. The aetiology of sclerosing peritonitis is felt to be multifactorial; it may occur as a result of Chronic Ambulatory Peritoneal dialysis (CAPD), with a reported incidence of 20% after 8 years (3), as result of recurrent peritonitis, however, it may also be idiopathic.

Treatment is multi-disciplinary including, parenteral nutrition, antibiotics, immunosuppression, alternative dialysis or transplantation,

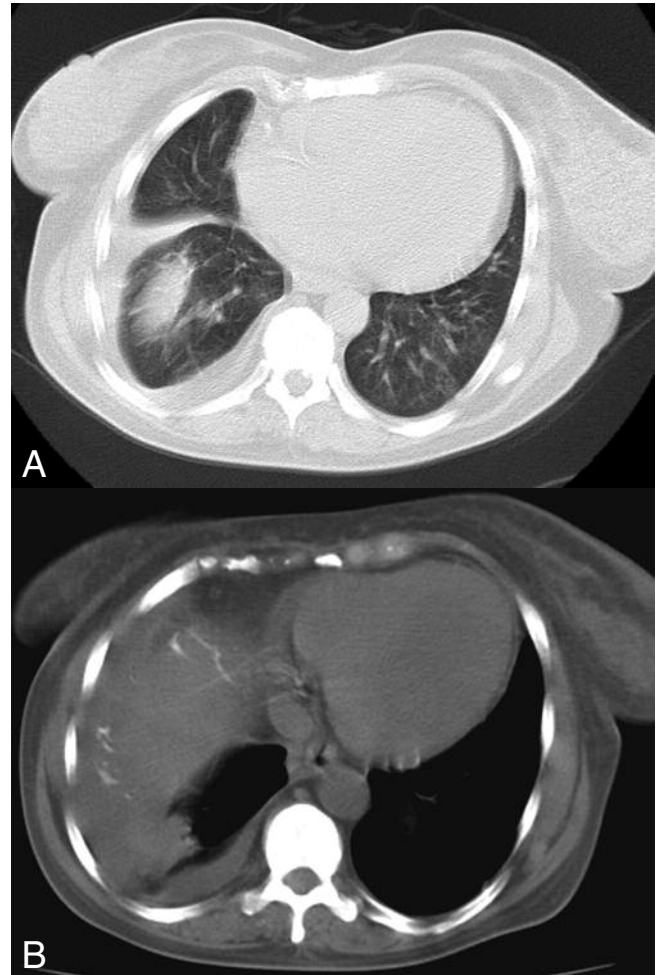


Fig. 1. — Non-contrast enhanced CT of the thorax (A) demonstrating bilateral basal pleural effusions, larger on the right, with fluid in the transverse fissure and interstitial edema consistent with fluid overload. B: Mediastinal window setting at the level of the upper abdomen, demonstrating the calcification of the peritoneal membrane.

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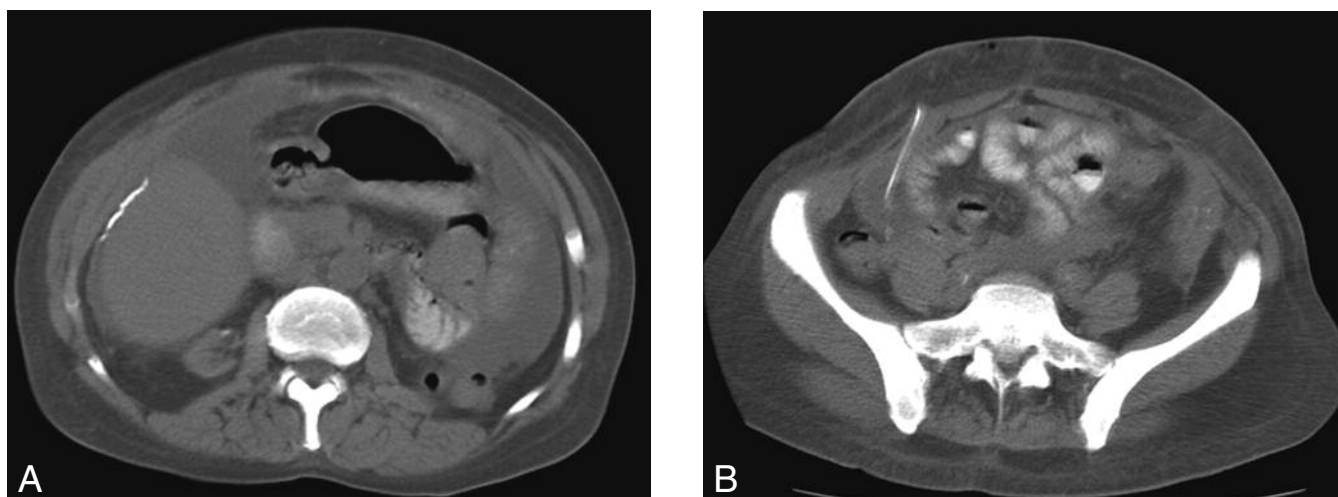


Fig. 2. — A: Axial image from a non-contrast abdominal CT performed subsequent to the CT thorax which demonstrates free fluid and peritoneal calcification. B: Axial abdominal CT image at the level of the lower abdomen demonstrates free fluid and a Tenckhoff catheter in keeping with peritoneal dialysis.



Fig. 3. — Abdominal radiograph demonstrates the Tenckhoff catheter and subtle peritoneal calcification in support of the diagnosis of sclerosing peritonitis.

and surgical resection. The differential diagnosis of peritoneal calcification must be considered and includes malignancy, tuberculosis and pseudomyxoma peritonei.

Complications include sepsis, malnutrition and surgical sequelae such as bowel obstruction. Immunosuppression may slow progression, prolong survival and possibly induce

remission. Paradoxically, removal of the abdominal catheter and commencing haemodialysis may hasten the progression of the disease (4).

In general, surgery should be avoided as far as possible since there is a high rate of post-operative complications such as perforation and fistulae. There is a high associated morbidity and mortality can reach 90% in patients with this condition. It is hoped that with increased renal transplantation, there may be fewer patients on longterm CAPD and reduction in the incidence of this devastating complication. Screening for sclerosing peritonitis should probably be performed in all patients who have been on CAPD for more than five years.

#### References

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