Unusual association of diseases/symptoms

Meralgia paraesthetica: an unusual complication in peritoneal dialysis

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Summary

A 53-year-old woman with a history of end-stage renal disease on peritoneal dialysis (PD) presented with a 3-month history of intermittent numbness and paraesthesia over the anterior aspect of the right thigh. The patient noticed the pain was worse on walking and related to dialysis sessions. An examination revealed no neurovascular abnormalities or abdominal masses. However, there was subjective paraesthesia in the distribution of the right lateral cutaneous nerve. Subsequent nerve conduction studies revealed the cause of the patient's symptoms. She was diagnosed with meralgia paraesthetica. Her symptoms resolved when the dialysis regime was modified.

BACKGROUND

Peritoneal dialysis (PD) can offer an improved quality of life to some patients with end-stage renal disease. This coupled with the drive to increase the presence of home dialysis therapy in the United Kingdom has seen a rise in the number of patients on this modality of renal replacement therapy. In our unit, the number of patients on PD has steadily increased over the last 48 months, and as a result we are now seeing some complications associated with PD therapy that have not been seen previously.

We hope to highlight the importance of this unusual but easily rectifiable complication of PD through this case report. As we identified the root cause of the problem, we modified the dialysis regime. This has enabled the patient to continue with a home therapy rather than having to resort to an alternative treatment, namely hospital-based haemodialysis.

CASE PRESENTATION

A 53-year-old woman with a history of end-stage renal disease (secondary to nephrosclerosis) and on continuous ambulatory PD for 12 months, presented to the renal clinic with a 3-month history of intermittent numbness and paraesthesia over the anterior aspect of the right thigh.

The patient noticed the pain was worse on walking, but further questioning revealed the pain was also related to dialysis sessions. The symptoms were worse after the dwell started, when fluid had entered the intra-abdominal cavity.

An examination revealed no neurovascular abnormalities and no abdominal masses. However, there was subjective paraesthesia in the distribution of the right lateral cutaneous nerve.

INVESTIGATIONS

Subsequent nerve conduction studies revealed compression of the right lateral cutaneous nerve. This is known as 'meralgia paraesthetica'.

An ultrasound examination of the abdomen and pelvis was performed. This excluded any pelvic or retroperitoneal masses that could account for the nerve compression.

TREATMENT

We hypothesised that the 2-litre volume of peritoneal fluid administered during each of the four manual exchanges through the day was compressing the nerve and causing her symptoms.

The dialysis regime was modified by carrying out four cycles of 2-litre automated peritoneal dialysis at night, with no manual exchanges during the day.

This resulted in a dramatic improvement in the patient's symptoms. This is not an altogether surprising complication given the increased abdominal pressure associated with PD. However, despite 21% of the UK population on dialysis being on PD,¹ no previous reports of this complication appear in the renal literature.

In terms of dialysis adequacy, the patient achieved excellent creatinine clearance (KT/V 4.23 (target 1.8–2)) before the change in dialysis regime. When automated peritoneal dialysis began, the KT/V reduced to 3.05. However, this coincided with a reduction in urine volume indicating that the decline in adequacy was secondary to loss of renal function as opposed to a change in the dialysis regime.

DISCUSSION

Meralgia paraesthetica, also known as Bernhardt–Roth syndrome, is a painful mononeuropathy of the lateral femoral cutaneous nerve. The term was coined by Vladimir Roth, a distinguished Russian neurologist. He described the symptoms in cavalymen, who wore their belts too tightly, compressing the emerging femoral cutaneous nerve.²

Meralgia paraesthetica is more common in men than in women³ and has an incidence of 4 per 10 000 person-years.⁴

The condition commonly occurs because of focal entrapment as the nerve passes between the ilium and the inguinal ligament near the attachment at the anterior superior iliac spine (see figure 1).

It typically occurs in isolation or rarely as a result of direct trauma. Other possible causes are external compression by intra-abdominal mass or fluid, stretch injury, ischaemia or as part of a peripheral neuropathy. Hence, it

Figure 1 Lateral femoral cutaneous nerve (L2–L3) passing under inguinal ligament to innervate anterolateral skin of the thigh.³

may be associated with acute changes in weight as well as wearing tight clothing.

Patients typically describe pain on the outer aspect of the thigh, occasionally radiating to the lateral aspect of the knee. The pain is often burning in nature and the area is more sensitive to light touch than to firm pressure. Patients may also experience hypersensitivity to heat. Prolonged standing or sitting with the thigh extended may also provoke symptoms.⁴

The diagnosis of meralgia paraesthetica is mainly based on the patient's description of pain within the characteristic location. A neurological examination reveals subjective

paraesthesia with the absence of any motor weakness or wasting and preservation of reflexes. An abdominal and pelvic examination is of paramount importance to exclude external nerve compression as a cause.

Electromyography nerve conduction studies may be required to confirm the diagnosis.

Meralgia paraesthetica is a self-limiting benign disease in most patients. Treatment is based on removing the causative factor for nerve compression and treating the symptoms with anti-inflammatory agents. More than 90% of patients respond to this. However, recovery usually takes several weeks to months, irrespective of the cause.⁴

In severe cases, a local nerve block can provide some relief. Neuropathic medication may also be tried, but is often not very helpful in the majority of patients. In persistent cases, surgical decompression may be required. However, this leaves permanent numbness in the territory of the nerve.

Learning points

- Meralgia paraesthetica is an occasional complication of peritoneal dialysis and may resolve with adjustments to the peritoneal dialysis regime.

Competing interests None.

Patient consent Obtained.

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