

Loin pain

Loin pain usually originates from the kidney although there are a number of other sources to be considered. Stones in the upper urinary tract can cause renal colic and this is said to be perhaps the most excruciating pain that a patient will experience.

Differential Diagnosis History and examination should have narrowed the differential diagnosis considerably.

- **Renal colic.** Pain is sudden in onset, very severe and the patient often writhing around. Pain may radiate to the groin and anteriorly. Often there is tenderness over the renal angle. Renal colic is rather more constant and persistent than **biliary colic**.
- **Pyelonephritis.** An ill patient with temperature often very high and even rigors. There may be symptoms of UTI and often there is vomiting. Pain is a dull ache. Expect leukocytosis and pyuria.
- About 10% of dissecting abdominal **aortic aneurysms** present with loin pain like renal colic². The aneurysm can be adjacent to the ureter and cause haematuria from irritation or trauma. Consider when an older patient presents with apparent renal colic for the first time.
- Blood clots can cause sudden ureteric obstruction and colic. Causes include renal biopsy, or medical problems like **bleeding disorders**, tumours of the kidney or renal pelvis, **haemophilia**, sickle cell disease, or glomerulonephritis.
- An uncommon cause is the idiopathic loin pain haematuria syndrome³ in which there is loin pain, haematuria of varying degree and no apparent cause.
- **Herpes zoster** causes a burning pain in a band corresponding to a dermatome. The pain may precede the rash. When the rash appears diagnosis is easy. The skin is tender.
- Muscular pain produces an aching discomfort that is exacerbated by lifting and bending. The affected area is likely to be tender. There may be a history of injury. **Examination of the back** should show the cause.
- Papillary necrosis can cause an acute obstruction of the ureter from the sloughed papilla. Women are affected more often than men. Causes include **analgesic abuse**, **cirrhosis**, recurrent pyelonephritis, **urinary tract obstruction**, **tuberculosis**, sickle cell disease, renal transplant rejection, and **diabetes**.
- A sharp stabbing pain can originate from the lung or pleura. Tuberculosis, pneumonia and **pulmonary embolism** are possible causes. The pain is typically pleuritic.
- Injury to the lower thoracic or upper lumbar nerve roots will cause radiculitis. Injury to the 10th, 11th, or 12th ribs has the distribution of renal colic but is usually sharp or stabbing. The pain is often acute and can radiate anteriorly and inferiorly, just like renal colic. Movement exacerbates the pain. Fracture of a transverse process in the thoracic or lumbar vertebrae can also produce this pain. Most patients are female. Radiculitis is a common cause of flank pain⁴ that is not of renal origin and should be suspected in patients with normal findings on urinalysis and normal findings on imaging studies of the urinary system. Fractured ribs may be produced by coughing.

- Kidney tumours can present with loin pain. The pain is gradual in onset and there may be painless haematuria and possibly a mass.
- PUJ (pelvi-ureteric junction) obstruction causes renal pain. It usually follows drinking large amounts of fluid as the diuresis causes distension of the renal pelvis and colic.
- Retroperitoneal fibrosis produces pain that is dull and insidious in onset but becomes progressively more severe. There is fibrous overgrowth of the retroperitoneal organs from the midline. When it involves the ureters it causes hydronephrosis and even renal failure. It is usually idiopathic but it has been associated with the use of methysergide for migraine and some malignancies. Males are affected twice as often as females and patients are usually aged 40 to 60 years. Pain is usually located first in the lower flank and abdominal regions. Testicular and periumbilical pain develops later.
- Renal infarction is frequently misdiagnosed⁵ initially as acute renal colic, pyelonephritis, or acute abdomen. Acute renal infarction affects both kidneys and both sexes equally. The average age of affected patients is about 65. Risk factors include age and risks for thromboembolism like atrial fibrillation. There is unilateral flank pain and haematuria. Other common symptoms include fever, nausea, and vomiting. LDH and WBC are usually elevated. Diagnosis is usually made by CT scan. Treatment is with intravenous heparin and/or intra-arterial thrombolysis.
- Rarer causes of loin pain include [Crohn's disease](#), [diverticulitis](#), [appendicitis](#), myocardial infarction, renal vein thrombosis, glomerulonephritis, [Berger's disease](#), acute nephritis, polycystic kidney disease, cholecystitis, adrenal tumours and haemorrhage, colon cancer, ovarian venous thrombosis and splenic infarction.
- Consider the differential diagnosis of [left upper quadrant pain](#) or [right upper quadrant pain](#).
- Sometimes a patient will present with a fictitious story highly suggestive of renal colic as a ruse to obtain an injection of pethidine. He will usually be insistent that only pethidine works and he will be very dissatisfied if given intramuscular diclofenac instead.