

Research papers

How does cross-cover between specialties affect general practitioners and overall patient care? An audit of primary care referrals and secondary care investigations for patients with a history suggestive of renal colic

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ABSTRACT

Many hospitals are reducing junior doctors' hours with cross-cover between specialties. Rotas might be compliant but what effect does this have on patient care?

A comparison study of 74 patients referred by general practitioners (GPs) with symptoms suggestive of renal colic was undertaken over a six-month period at the Royal Gwent Hospital, Newport, South Wales. Patients were either admitted under the new cross-covering general surgeons or directly under the urologists, and their treatment and follow-up compared.

The study shows that GPs are very successful at diagnosing acute urological conditions, including renal colic. The urologists are significantly better than the general surgeons at investigating and arranging follow up for these patients. We recommend that changes be implemented to allow GPs to refer acute urological conditions to the urologists rather than a cross-covering speciality.

Keywords: acute renal colic, cross-cover, doctors at night

Introduction

Acute renal colic is a common, often recurrent condition with an annual incidence of one to two cases per 1000 and a lifetime risk of 3–5% in women and 10–20% in men.^{1–3} Most acute cases of renal colic initially present to the general practitioner (GP) with a sudden onset of severe unilateral flank pain radiating into the groin or genitals.^{4,5}

Renal calculi form in the proximal urinary tract and migrate distally. They commonly lodge at three points

along the ureter: pelvico-ureteric junction, pelvic brim (where the ureter crosses the iliac vessels) and the vesico-ureteric junction. The pain is caused by an obstruction to urinary outflow by the calculus, which results in an increase in urinary wall tension. This in turn triggers the synthesis and release of prostaglandins, which further exacerbate the problem by creating a diuresis and smooth muscle spasm.⁶

GPs have the frequently difficult task of clinically diagnosing acute renal colic, deciding whether the patient requires an acute hospital admission, and then the arduous task of referring to the on-call junior doctor or bed manager.^{7,8}

Many hospitals throughout Britain combine their emergency urology cover with another surgical specialty, often, general surgery. This is becoming increasingly more common with the advent of the European Working Time Directive.^{9,10} This audit aims to assess the accuracy of GPs at diagnosing and referring acute renal colic. It also aims to assess whether patients receive the 'gold standard' investigations and follow up under a cross-cover system.¹¹⁻¹⁴ Since calcium oxalate and uric acid constitute 80% of renal stones, European guidelines recommend that patients presenting with renal colic should have serum calcium and uric acid levels checked.¹⁵ These simple and inexpensive blood tests may reveal a potentially reversible metabolic condition.

The Royal Gwent Hospital, Newport is a busy 900-bed district general hospital serving a population of 550 000. Over a six-month period the local GPs made 1548 acute general surgical and 211 acute urology referrals. Acute urology referrals are assessed by the on-call urology senior house officer (SHO) with the exception of renal colic, which is dealt with by the general surgeons. However, this remains a contentious issue and some recurrent cases of proven renal calculi can be referred directly to the urologists if the GP liaises with the on-call urology SHO. It is well documented that symptoms suggestive of acute renal colic may be explained by an acute surgical abdomen or a leaking abdominal aortic aneurysm.¹⁶

Method

All GP referrals are made via a nurse practitioner and recorded in the bed management records at the Royal Gwent Hospital. The bed management log was used to identify all patients referred with the diagnosis of possible renal colic or loin to groin pain over a six-month period from August 2003 to February 2004.

The notes were examined and the diagnosis, investigations and follow up were recorded.

Results

During the period August 2003–February 2004, 74 patients were admitted with loin to groin pain or possible renal colic. This averages three admissions per week; 73 sets of case notes were located and appraised.

The patients included 37 males and 36 females with an age range from 22 to 84 years, the median being 49 years.

The local GPs were correct in diagnosing 40 cases of renal colic out of the 73 cases referred (54.8%). Of the 73 cases, 52 were referred to general surgery, while 21 were referred directly to the urologists. The 'gold standard' intravenous urogram (IVU) was used to confirm that the 40 cases of renal colic were due to calculi¹⁷ (surgery 21/52 and urology 19/21).

The two remaining urology referrals were: a urinary tract infection and a large renal cyst distorting the renal pelvis. Several diagnoses accounted for the remaining 31 general surgical referrals. These are illustrated in Table 1.

One-hundred percent of the urology referrals had a urology condition, of which 90% were renal calculi; 65% of the surgical referrals had a urology condition, of which 40% were renal calculi. Overall, the GPs were accurate in diagnosing a urology condition 75.5% of the time.

Only 18% of the referrals had a surgical diagnosis, of which only 7% required an operation.

Investigations and follow up

Table 2 compares the urology and surgical admissions for: haematological investigations, time from admission to diagnosis of renal calculi by IVU and the subsequent outpatient follow up.

Discussion

The results clearly show that GPs were correct in diagnosing and referring recurrent cases of renal colic to the urologists 90% of the time. However, the patients referred to the general surgeons were not known to have a previous history of urolithiasis. This may explain why the GPs were less accurate at diagnosing renal colic in the surgical case group. Perhaps where there was more diagnostic uncertainty, the GPs chose to refer to the surgeons rather than the urologists. Although, it is important to note that 65% of the surgical referrals did in fact have a urological condition.

Identifying the type of calculi can be helpful in treating and minimising recurrent cases of renal colic. Fifty per cent recur within five years. Investigating the patient and correcting an underlying metabolic disturbance can avoid this. Following idiopathic renal colic, the most common metabolic causes can be investigated with simple haematological tests, e.g. calcium and urate levels. The less common causes can be investigated further as an outpatient. Failure to identify an underlying treatable condition can result in

Table 1 Showing the breakdown of surgical and urological diagnoses for the GP referrals

Diagnosis	Urology referrals <i>n</i> (%)	Surgical referrals <i>n</i> (%)	Total <i>n</i> (%)
Renal calculi	19 (90)	21 (40)	40 (55)
Urinary tract infection/pyelonephritis	1 (5)	8 (15)	9 (12.5)
Renal cyst distorting renal pelvis	1 (5)	1 (2)	2 (3)
Non-specific abdominal pain		6 (11)	6 (8)
Musculoskeletal pain		4 (8)	4 (5)
Haematuria		4 (8)	4 (5)
Gallstones		3 (6)	3 (4)
Appendicitis		2 (4)	2 (3)
Subacute small bowel obstruction		1 (2)	1 (1.5)
Anal fissure		1 (2)	1 (1.5)
Pneumonia		1 (2)	1 (1.5)
Total	21	52	73

Table 2 Comparing the investigations and follow up for the urology and surgical referrals

	Urology (<i>n</i> = 19)	Surgery (<i>n</i> = 21)
Serum calcium checked (%)	100	48
Serum uric acid checked (%)	95	14
Time to IVU (days)	mean <1, range 0–4	mean <1, range 0–2
Urology follow up (%)	100	76 ^a

^aOne of the surgical renal colics received a surgical outpatient appointment rather than urology.

increased GP emergency workload and increased acute hospital admissions and cause unnecessary distress and loss of earnings for the patient. Patients admitted under the care of the urologists are more likely to have the further investigations and follow up. Another worrying pitfall in the system is the failure to fully investigate patients presenting with haematuria. A quarter of the cases of haematuria did not receive any routine investigations or follow up. The 'gold standard' is that, 'all patients with haematuria need investigation even if they are taking anticoagulant drugs'. This should include radiographic renal tract

imaging, cystoscopy, urine microscopy and urine cytology.^{12,18,19} Microscopic haematuria may be the only feature of an underlying urinary tract neoplasm.

There is no significant difference between the urologists and surgeons in time to IVU and confirmation of the diagnosis of renal colic.

There will always be concern for the urologist that a referred renal colic may turn out to be a leaking abdominal aortic aneurysm. Conversely, the general surgeons can argue that an infected, obstructed kidney or potential urinary neoplasm may be missed or inappropriately treated, with similar consequences.

Conclusion

Given the accuracy of the local GPs at diagnosing a urinary problem, and since only 7% of the referrals had an operable surgical diagnosis, we suggest that all patients with presumed renal colic are admitted under the care of the urologists. The GPs should be able to refer directly to the bed manager in order to provide a more efficient and effective service for all involved. However, a swift surgical review should be offered to any patient of particular concern to the admitting junior doctor. We are presenting these findings to both the surgical and urology directorate in order to encourage the above changes to be implemented.

Potential cases of distressing recurrent renal colic could be avoided with early investigations. The audit shows that specialists manage, investigate and follow up their particular area of expertise more effectively than other clinicians.

A cross-cover system may reduce doctors' hours but the question remains, 'Is this at the expense of the patient?'.

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CONFLICTS OF INTEREST

None.

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Received 25 August 2004

Accepted 17 September 2004