RENAL PAPILLARY NECROSIS IN THE EAST COAST OF PENINSULAR MALAYSIA

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ABSTRACT

Six hundred and one intravenous Urograms (IVU) done at the General Hospital, Kuala Trengganu from 1981 to 1985 were reviewed retrospectively for Renal Papillary Necrosis (RPN). It was found that 1.3% of IVUs had RPN. There was a higher incidence of RPN amongst males as compared to females. RPN occurred more commonly in the younger age groups.

Keywords: Renal papillary necrosis, east coast of Peninsular Malaysia.

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INTRODUCTION

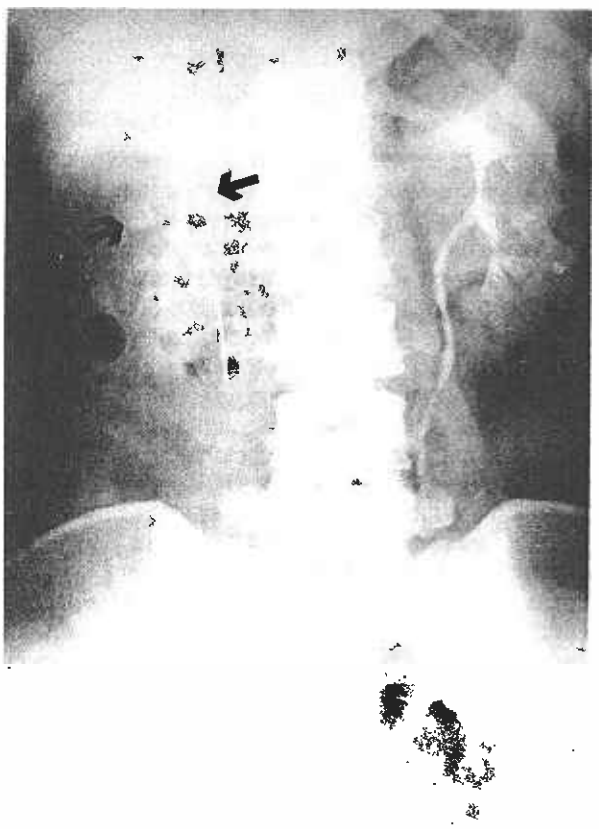
Previous studies have shown that analgesic abuse, RPN and analgesic nephropathy are prevalent in the Malaysian population (1-4). These studies however have been confined to the west coast of Peninsular Malaysia. This study was undertaken to determine whether RPN occurs in the east coast of Peninsular Malaysia which is predominantly rural.

SUBJECTS AND METHODS

Six hundred and one IVUs done at the General Hospital, Kuala Trengganu from January 1981 to September 1985 were reviewed retrospectively for RPN. The radiological criteria for the diagnosis of RPN were papillary atrophy as evidenced by the calyceal cup becoming less deep and the angles of the fornices becoming less acute, papillary necrosis as indicated by irregularity of the papillae and fornices, ring shadows, papillary cavities, fistulae, renal calcification, medullary necrosis as indicated by "clubbing" of the calyces and renal atrophy (5,6).

Attempts were made to recall patients with RPN and their case notes were reviewed for relevant clinical information and results of investigations that had been previously performed.

Fig 1
Calyceal shrinkage and irregularity of the right mid-pole and upper pole calyces. The left kidney is normal.



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RESULTS

Six hundred and one IVUs that had been performed between 1981 and 1985 were reviewed. There were 500 Malays, 78 Chinese, 16 Indians and 7 others. 440 patients were males and 161 patients were females and they were of all age groups. The indications for IVU are renal colic/calculi (55.0%), urinary tract infection (9.5%), hypertension (8.0%), haematuria (6.8%) and miscellaneous (20.7%).

Radiological changes of RPN (Fig 1) were observed in eight cases accounting for 1.3% of all IVUs reviewed between 1981 and 1985. There were six Malays and two Chinese (Table I). Five patients were males and three patients were females. RPN was observed mainly in the younger age groups (below 40 years).

The clinical presentation of patients with radiological changes of RPN were renal colic/calculi (50%), urinary tract infection (25%), haematuria (12.5%) and acute retention of urine (12.5%).

The major radiological changes noted were clubbing of the calyces (8 cases), calcification in the necrotic papilla (3 cases) and medullary cavities (2 cases). RPN was bilateral in five cases and unilateral in three cases.

Attempts made to trace all the eight patients were unsuccessful and hence it is not possible to ascertain a history of analgesic abuse. However, review of the case notes of these patients excluded other causes of RPN such as diabetes mellitus, sickle cell anaemia and tuberculosis on the basis of laboratory investigations that had been performed previously.

DISCUSSION

Eight cases of RPN have been documented at Kuala Trengganu over a five year period from 1981 to 1985. As this is a retrospective study and all the patients have been lost to follow-up it is not possible to ascertain a history of analgesic abuse in these patients. However, other causes of RPN such as diabetes mellitus, sickle cell anaemia and tuberculosis had been excluded on review of the case notes. Previous studies done by us indicate that analgesic nephropathy is the most common cause of RPN in our population (2-4). Hence it may be possible to extrapolate that most of these patients have analgesic nephropathy.

Table I
Race, Sex and Age Distribution of Patients with RPN

Age (Yrs)	Malay		Chinese		Total
	Male	Female	Male	Female	
21-30	1	1	–	1	3
31-40	1	–	–	1	2
41-50	–	–	–	–	–
57-60	2	–	–	–	2
61-70	1	–	–	–	1
Total	5	1	–	2	8

In a previous study we had interviewed 431 residents in Kampong Pandan which is a village on the outskirts of Kuala Lumpur. Likewise, we had interviewed 187 residents in two rubber estates near Seremban and Gemas (1). It was found that the commonest analgesic consumed was paracetamol (82 to 94.4%) followed by compound analgesics such as Chap Kaki Tiga and Chap Harimau (16.7 to 50.0%). Chap Kaki Tiga contains aspirin, acetaminophen and caffeine whilst Chap Harimau contains aspirin, salicylamide and caffeine. These analgesics are available over the counter. Although these three villages are in the West Coast of Peninsular Malaysia they are essentially rural. The patients having RPN in this study may have consumed similar analgesics. However, this cannot be confirmed as they have been lost to follow-up. Further epidemiological studies would be necessary to ascertain the analgesic consuming habits of the people in the east coast of Peninsula Malaysia.

Consistent with our previous studies (1-4), there is a higher incidence amongst males (5 cases) as compared to females (3 cases). There is also a higher incidence amongst Malays as compared to the other races, but this could be attributed to the larger Malay population in the area studied.

It needs to be emphasized that analgesic nephropathy must be considered as a differential diagnosis in patients presenting as renal colic or calculus (7). Four of the eight patients in this study presented as renal colic. Necrotic papillae can be sloughed and cause symptoms and signs of renal colic such as colicky pain in the loin associated with haematuria. The sloughed papilla could be mistaken for a calculus especially if it is calcified. There is an impaired acidifying capacity in analgesic nephropathy and frank renal tubular acidosis with a minimum urinary pH > 5.7 is seen when renal function is impaired. This functional defect is responsible for medullary calcification and calculus disease. The other factors that contribute to stone formation are necrotic papillae, exfoliation of tubular cells by analgesics, urinary tract obstruction and infection by urea-splitting organisms, such as Proteus (8).

In addition to the eight cases of RPN which were detected on reviewing the IVUs performed between 1981 and 1985, a further six cases of RPN (4 males, 2 females; 4 Malays and 2 Chinese) had been previously documented by one of the authors from 1976 to 1980 when he was working as a radiologist at the General Hospital in Kuala Trengganu and Kota Bahru. Thus, collectively a total of 14 cases of RPN have been documented over a 10 year period from 1976 to 1985 (6 cases from 1976 to 1980 and 8 cases from 1981 to 1985).

In conclusion, we have demonstrated the occurrence of RPN in the east coast of Peninsular Malaysia. Previous studies have demonstrated their occurrence in the west coast of Peninsular Malaysia (1-4). It appears therefore that RPN and analgesic nephropathy may be widespread, occurring throughout the country.

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