presentation she remained well and did not require further immunosuppression.

Comment

We believe that this case shows that nephritis associated with antibody to glomerular basement membrane, which rapidly leads to the patient becoming dependent on dialysis, may be reversible if early diagnosis and treatment are possible. Because of the few glomeruli in the biopsy specimen assessment of the extent and severity of the disease was difficult. The presence of some fairly normal glomeruli and the short history of rapidly progressive renal failure suggested that treatment might be effective. The assay for determining circulating antibodies to glomerular basement membranes was invaluable in monitoring the activity of the disease and encouraged us to persist with treatment as the antibody titres declined. The presence of antibody to the cytoplasm of neutrophils initially is interesting, but its importance in this patient is unclear. It has been reported as being of diagnostic value in Wegener's granulomatosis and microscopic polyarteritis.³ Our patient did not have features of vasculitis. The basic histological diagnosis was crescentic nephritis due to antibody to glomerular basement membranes.

The poor prognosis of patients with this condition, which is associated with renal failure necessitating dialysis, has led to doctors being reluctant to undertake or persist with prolonged immunosuppression and plasma exchange.^{1,5} We suggest that patients with renal impairment of recent onset and with some viable glomeruli on histological examination may regain renal function despite having needed dialysis for several weeks.

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Highly sensitive screening tests for hepatitis B surface antigen in transfusion centres of developing countries

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Although routine screening of donor blood for hepatitis B surface antigen (HBsAg) is desirable in our region, which has a moderately high prevalence of carriers,¹ screening is reported not to be cost effective in west Africa.² Therefore we assessed the risks, costs, and benefits when blood from donors was not screened or was screened with tests of low, medium, and high sensitivity. We avoided giving transfusions of infectious blood but calculated the risk of infection from the prevalence of carriers of HBsAg in the donor population and of susceptibility to infection among potential recipients.

Methods and results

Serum from 500 consecutive volunteer blood donors was screened for HBsAg by counterimmunoelectrophoresis,³ reverse passive haemagglutination with commercial kits, and enzyme linked immunosorbent assay (ELISA) (Auszyme monoclonal, Abbott, Chicago). Serum from 500 consecutive patients who were cross matched for transfusion was screened sequentially for

HBsAg, antibody to hepatitis B core antigen (Corzyme, Abbott), and antibody to HBsAg (Ausab, Abbott). All serum samples positive on ELISA were retested to confirm the result.

Four (0.8%) of the donors were positive for HBsAg on counterimmunoelectrophoresis; 12 (2.4%) yielded positive results on reverse passive haemagglutination screening, 11 (2.2%) of which were confirmed by reverse passive haemagglutination blocking tests; and 35 (7%) yielded positive results on ELISA (table). All samples of serum positive on counterimmunoelectrophoresis were positive on reverse passive haemagglutination, and all samples positive on reverse passive haemagglutination were positive on ELISA. The sensitivities of counterimmunoelectrophoresis and reverse passive haemagglutination were only 11% and 31%, but their specificities were 100% and 99%, respectively.

Among the 500 potential recipients of transfusions 99, 108, and 39 were positive for HBsAg, antibody to hepatitis B core antigen, and antibody to HBsAg, respectively; 254 (50.8%) did not have any markers of the virus and were thus susceptible to infection. Without screening, the probability of one unit of infectious blood being given to a susceptible individual was 0.036 (50.8% × 7%). With routine screening by counterimmunoelectrophoresis the risk of infection from a three unit transfusion reduced from 0.108 (0.036 × 3) to 0.0945 (50.8% × 6.2% × 3). Routine screening with reverse passive haemagglutination decreased the risk to 0.073 (50.8% × 4.8% × 3).

Counterimmunoelectrophoresis, reverse passive haemagglutination, and ELISA cost US \$0.50, \$1.00,

Risks of transfusing blood positive for hepatitis B surface antigen (HBsAg) with different screening tests

Screening test	% Of units positive for HBsAg detected	% Of units positive for HBsAg not detected*	Risk of an uninfected recipient receiving HBsAg if he or she receives:			% Of transfusions (of 3 units) in which infection averted by screening†
			1 Unit	2 Units	3 Units	
None	0	7.0	0.036	0.072	0.108	0
Counterimmunoelectrophoresis	0.8	6.2	0.031	0.063	0.094	1.4
Reverse passive haemagglutination	2.2	4.8	0.024	0.049	0.073	3.5
Enzyme linked immunosorbent assay (ELISA)	7.0	0	0	0	0	10.8

*Percentage detected by ELISA minus percentage detected by other method.

†(Risk associated with unscreened blood minus risk associated with given method) × 100.

and \$2.00 respectively per unit, so that detecting each unit of infected blood would cost \$6.25 ($\$0.50 \div 0.8\%$) for counterimmunoelectrophoresis, \$45.50 ($\$1.00 \div 2.2\%$) with reverse passive haemagglutination, and \$28.60 ($\$2.00 \div 7\%$) with ELISA. Screening with these three methods would avert giving a potentially infectious transfusion in 1.4%, 3.5%, or 10.8% of recipients, respectively (table). Thus the actual cost per recipient of preventing infection from transfusion of three units would be \$107 ($3 \times \$0.50 \div 1.4\%$) for counterimmunoelectrophoresis, \$86 ($3 \times \$1.00 \div 3.5\%$) for reverse passive haemagglutination, and \$56 ($3 \times \$2.00 \div 10.8\%$) for ELISA.

Comment

We previously found that screening donor blood by counterimmunoelectrophoresis reduced the incidence of jaundice after transfusion from 9.4% to 2.2%.¹ This method is unlikely to be so effective now: systematic elimination of carriers with high titres of HBsAg and exclusion of paid donors have probably resulted in an increased proportion of carriers with low titres of antigen among the population of blood donors, who would be detected only by more sensitive screening

tests such as reverse passive haemagglutination or ELISA.

Although the cost of reverse passive haemagglutination is twice and of ELISA four times that of counterimmunoelectrophoresis, they confer 2.5 and 7.7 times the benefit, respectively. ELISA averted potential infection most cheaply and counterimmunoelectrophoresis at greatest cost. We therefore recommend that highly sensitive tests such as ELISA, which uses monoclonal antibodies, should be used to screen blood in transfusion centres in developing countries.

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Treatment of ingrowing toenails by surgeons and chiropodists

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Ingrowing toenails (onychocryptosis) usually affect the hallux and are most common in patients aged 15-40. Surgeons most commonly treat ingrowing toenails by avulsion,¹ despite a reported recurrence rate of over 60%.² Chiropodists most commonly use segmental phenolic ablation, a technique that has been well illustrated elsewhere,³ although this was offered by only five of 106 consultant surgeons.¹ Although ingrowing toenails are common, the treatments available have not been critically evaluated.

Patients, methods, and results

In a preliminary prospective study 140 consecutive patients with 164 ingrowing hallux nails were treated by avulsion of the nail. Recurrence, defined as penetration of the nail fold by the nail, was present in 32% of patients at follow up after one year and 42% after three years.

As many different techniques can be used to ablate the nail bed⁴ a second study compared the effectiveness of ablation with a chemical and surgical ablation. One hundred and fifty two patients were prospectively and randomly allocated to receive either total phenolic ablation or total excision of the nail bed with a knife (Zadik's operation). The overall recurrence rate was 14%, with no significant difference between the groups, although one surgeon had only one recurrence after 21 Zadik's operations.

A third prospective study compared the operation most commonly recommended by surgeons (avulsion) with that most commonly recommended by chiropodists (segmental phenolic ablation) and compared the success of segmental phenolic ablation performed by surgeons and chiropodists. Altogether 424 patients attending either surgeons or chiropodists were studied. In all cases the blood supply and skin nutrition of the foot were normal. Patients who presented to the surgeons were randomly allocated to treatment with avulsion (n=45) or segmental phenolic ablation. Those

allocated to receive segmental phenolic ablation were added to the patients presenting to chiropodists, and patients from this common pool were randomly allocated to be treated by surgeons (n=197) or chiropodists (n=182). This format was chosen because the chiropodists asked not to perform avulsion as they regarded its results as unsatisfactory. Preliminary results of treatment by avulsion were disappointing so we stopped assigning patients to this treatment. The patients treated by avulsion continued to be followed up. Though patients who did not attend for post-operative checks were contacted by post or telephone, the outcome was not known in 79 cases.

Treatment was regarded as successful if patients remained free of symptoms throughout the 12 months of follow up. The table shows that where outcome was known chiropodists and surgeons achieved an overall success rate of 95% with segmental phenolic ablation; a 47% success rate was achieved with avulsion.

Outcome of 424 cases of ingrowing toenails 12 months after treatment. Numbers in parentheses are percentages of those for which outcome was known

	Recurrence	Good result	Result not known
Avulsion (n=45)	20 (53)	18 (47)	7
Segmental ablation by chiropodist (n=182)	4 (3)	141 (97)	37
Segmental ablation by surgeon (n=197)	11 (7)	151 (93)	35

Comment

These studies of patients with ingrowing toenails show an unacceptable rate of recurrence after simple avulsion (over 40% at three years). The incidence of nail regrowth after total phenolic ablation and after Zadik's operation was not significantly different, but the success of Zadik's operation seems to depend on the surgeon. The recurrence rate at 12 months after segmental phenolic ablation was only 5%, chiropodists achieving slightly better results than surgeons.

The rough cost of surgical treatment in our hospital is £68, compared to £20 for treatment in our chiropody clinic. If the 10 000 new cases of ingrowing toenail seen each year in the United Kingdom were treated by segmental phenolic ablation in chiropody clinics