death. The other patient required a further two units of blood 18 weeks after interstitial laser treatment. None of the patients received further laser treatment.

Comment

There are three major problems in the endoscopic laser treatment of bleeding gastric cancer. Firstly, the tumour is often large, making coagulation of the entire surface impossible. Secondly, tumours may protrude into the lumen, making access to the distal surface of the lesion impossible. Finally, blood and clot in the stomach obscure the view. The possibility of using the laser at low power for long exposure times with the fibre inserted directly into a tumour was first suggested as a method of destroying solid tumours in 1983,[3] and this technique is being developed for the percutaneous treatment of solid liver and pancreatic cancers.[4] Initial studies using this technique on normal liver tissue have shown that vessels can be permanently occluded and predictable tissue necrosis produced.[5] There were no complications, although excessive treatment might produce perforation. This initial study shows that the clinical effect of interstitial laser photocoagulation on the bulk of the tumour is dramatic and that bleeding can be stopped.

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Mumps, measles, and rubella vaccination and encephalitis

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We report a case of encephalitis in a young child 27 days after immunisation with mumps, measles, and rubella vaccine. Mumps meningitis in a 14 year old girl 26 days after immunisation has been previously reported.[1] With the introduction of the vaccine in Somerset, Fife, and north Hertfordshire in April 1987 evidence for neurological symptoms occurring up to 21 days after immunisation was sought.[2] The vaccine was introduced in the rest of Britain in October 1988.

Case report

A 14 month old girl was admitted locally in November 1988 with a 24 hour history of fever and vomiting and a single generalised convulsion. She was conscious and had a fever (39°C). Shortly afterwards she went into status epilepticus and required sedation, paralysis, and ventilation. She was transferred to us for further management. Her seizures, measured by monitoring of cerebral function in the intensive treatment unit, continued for a further two hours despite heavy sedation. She required artificial ventilation for four days. Her recovery was slow and characterised by irritability, odd behaviour, and central visual field loss. There was no evidence of retinitis or other fundal changes, and visual evoked responses remained normal She was discharged 28 days after admission, still with odd behaviour and visual impairment. After four months she was well with no apparent neurological effects.

She had never been ill before. There was no family history of epilepsy or febrile convulsions. BCG had been given at birth and triple vaccine and oral polio vaccine at the usual time without adverse effects. She had received mumps, measles, and rubella vaccine containing mumps virus Urabe Am 9 strain 27 days before admission. Lumbar puncture was performed on three occasions. The table shows the results of biochemical investigations. An electroencephalogram suggested encephalitis, and computed tomography of the brain yielded results consistent with meningoencephalitis.

Results of biochemical tests carried out on girl aged 14 months with encephalitis after mumps, measles, and rubella vaccination

Measurement	Results
Cerebrospinal fluid:	
White cells	6×10^6/l*
Protein	0·4 mg/l
Glucose	3·3 mmol/l†
Bacterial cultures:	
Blood	Negative
Cerebrospinal fluid	Negative
Virological cultures:	
Cerebrospinal fluid	Negative
Throat	Negative
Urine	Negative
Faeces	Negative
Serological testing:	
Mumps S	4-Fold rise in antibody titre
Measles	Raised antibody titre
Rubella IgM	Raised antibody titre

*Predominantly lymphocytes.
†0·61 Of plasma glucose value.

Comment

Although we could not isolate mumps virus in this patient, we found a fourfold rise in the S antibody titre to mumps virus by complement fixation while she had encephalitis, suggesting a temporal relation between the vaccination and the symptoms. Attenuation of the mumps virus may prolong its usual incubation period.

With the introduction of a nationwide mumps, measles, and rubella vaccination programme in Finland it was claimed that "no case of encephalitis associated with these microbes has been found, nor have there been any clinical cases of these infections or the respective antibody findings."[3] In the United States too "no neurological complications have been attributed to mumps immunization."[4] In both these reports, however, the time interval between the observation of neurological symptoms and immunisation was not stated.

We are aware of three unpublished reports of mumps meningoencephalitis temporally associated with mumps, measles, and rubella vaccine in the United Kingdom (Smith Kline and French, personal communication). The calculated rate of encephalitis may be as high as one per 100 000 vaccinations.[1] There is evidence, however, that the incidence of natural mumps encephalitis has fallen overall in those countries that have universally introduced the vaccine.[5] Our case suggests that at least 30 days' follow up is needed to exclude a possible neurological complication of the vaccination.

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