Medical Memoranda

Blindness After Use of Triple Antigen

Blindness without gross cerebral damage as a result of pertussis vaccine has not been reported. However, Byers and Moll (1948), in an analysis of 15 cases of severe reactions after pertussis vaccine, mentioned two cases of blindness as part of generalized extensive brain damage. A case is here recorded in which a transitory mild encephalopathy was followed by a second dose of triple antigen of diphtheria tetanus and pertussis vaccine which eventually led to total blindness.

CASE REPORT

A baby girl aged 4½ months was taken for the first consultation because of high fever after a second dose of triple antigen vaccination. There were no siblings and no family history of mental defectiveness or backwardness. Delivery of the baby was normal and her birth weight was 6 lb. 3 oz. (2,810 g.). She was slow in raising her head, and had a small capillary angioma over the left eyebrow, but was otherwise normal; she recognized familiar faces when she was between 2 and 2½ months old. She had B.C.G. vaccination at birth.

At 4 months she was given the first dose of triple antigen 0.5 ml. and no reaction was noticed. The vaccine, supplied by one of the reputable laboratories, contained in a 1-ml. dose: drip prophylactic B pertussis, 20,000 million L125, purified diphtheria formol toxoid Lf25, and purified tetanus toxoid Lf10. Four weeks later the child received a second injection of 1 ml. of the same vaccine. Shortly afterwards her temperature rose to 104° F. (40° C.) and was controlled with soluble aspirin. Next day an abrupt change was noticed in her behaviour. Before the second injection she was very active; she followed moving objects and turned towards the direction of sound. Later she became apathetic to her surroundings and there was an abnormal rolling of the eyes and persistent deviation of both eyes towards the right frontal region. She remained alternately irritable and drowsy for the next three days and generally refused her food. Convulsion was absent, but she did vomit occasionally.

On examination the child was lethargic, but neurological examination revealed normal conditions except for the conjugate deviation of both eyes to the right cortex. Her pupils were equal and reacted to light. The fundus oculi, ear, nose, throat, heart, and lungs were all normal and the fontanelles were not tense. The circumference of the head was then 16½ in. (41 cm.).

A physician who examined the child a week later discovered no abnormality except that she did not follow the light or any other moving object. She was given oral tetracycline for six days and oral steroids (prednisolone) 2.5 mg. twice a day for three weeks; this was gradually tailed off. She started to show response to moving objects and recognize familiar faces after the treatment was begun.

A month later the physician was consulted again when the child's temperature rose to 104° F. (40° C.). There was no other abnormality except that her total white-cell count was low, and no obvious cause could be attributed to the fever. The temperature settled rapidly with oral tetracycline, which had to be discontinued on the third day, when a rash appeared all over her body. The rash disappeared with local and oral promethazine hydrochloride.

After this second attack of fever her response to persons was definitely absent, as she was unable to see. The general behaviour of the child was otherwise satisfactory. Oral steroids were repeated for one month without any improvement in her vision; there was no evidence of intracranial hypertension or any positive neurological signs. She remained afebrile subsequently. The circumference of the

head was now 17 in. (43 cm.). She started crawling at 7 months and teething at 8 months. At 14 months she could sit up, but made no effort to stand or talk. There was no evidence of spasticity. A recent psychometric investigation revealed that the child was about six to eight months behind her chronological age. She was still unable to see, and the latest ophthalmoscopic examination showed normal fundus and a normal light reflex. She followed normally the direction of sound and played a lot.

COMMENT

In the above case the reaction was probably due to the pertussis vaccine in the triple antigen; one of the cases of Byers and Moll's (1948) series is attributed to this. The present case is a strange one, as the loss of vision is not associated with the gross cerebral damage reported by other authors. It is also peculiar that the loss of vision improved initially with steroid therapy only to recur despite further steroid administration. It is still uncertain whether the second attack of fever was just a continuation of the first reaction. There was no evidence of intracranial hypertension or any gross cerebral damage. Pneumoencephalography and electroencephalography were not done.

The available literature on this subject (Byers and Moll, 1948; Toomey, 1949) shows that encephalopathy after pertussis vaccine is more common and has a greater damaging effect on the brain than that following any other type of vaccination. In view of the fact that encephalopathy following pertussis vaccine appears to have a more damaging effect on the brain, further studies and research should be made on the value of such vaccination in non-epidemic or non-endemic areas, or before the child goes to school, when the risk of contracting whooping-cough is at its minimum.

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REFERENCES

- Byers, R. K., and Moll, F. C. (1948). *J. Pediat.*, **1**, 437.
Toomey, J. A. (1949). *J. Amer. med. Ass.*, **139**, 448.

Radiosensitive Adamantinoma

Adamantinoma of the mandible is a rare condition. In the area covered by the South-Western Regional Hospital Board, which has a population of 2,805,000, a total of 66,875 new cases of malignant disease were registered during the period 1951-9. In the same period eight cases of adamantinoma were registered, five of these being proved by biopsy.

Most authorities regard adamantinoma as being a radio-resistant tumour and advise its treatment by total excision. McWhirter (1952) reported a small series of cases treated by radiotherapy, which he stated might be an alternative method. In the ensuing discussion Fitzgibbon *et al.* (1952) were wholly in favour of surgery. Bonta and James (1955) recommended "total excision" and stated that "radiation therapy is of no value in the management of this radio-resistant tumour" and cited eight references. Hickey *et al.* (1956) only discussed surgery. Schobinger (1958) stated that "ameloblastomas are radio-resistant tumours" and cited 76 references.

In view of the preponderant opinion that surgery is the only satisfactory treatment, it seems worth while to report the following biopsy-proved case, in which radiotherapy has been the only treatment.

CASE HISTORY

The patient, when aged 84, was seen by a dental surgeon on October 23, 1957. She gave a history of a dental extraction

FIG. 1.—Patient's appearance on October 14, 1959, at start of treatment.

FIG. 2.—Lateral x-ray film of mandible on October 7, 1959, before treatment.

FIG. 3.—Histological appearance on October 9, 1959, showing typical features of adamantinoma before treatment. (H. and E. $\times 95$.)

40 years previously in the right lower 7/8 region; following this there was a swelling on the mucosa which gradually became larger and had recently ulcerated. An x-ray report on the mandible on October 23 stated: "The appearances are those of a tumour involving the ascending ramus angle and part of the body. The most likely diagnosis is an adamantinoma."

In view of her age the patient steadfastly refused offers of surgical treatment. X-ray films were taken at intervals and the lesion was seen to be growing steadily. The tumour ulcerated into the mouth, producing large fungations and a large swelling (Fig. 1). In September, 1959, she had several severe haemorrhages from the fungations in the mouth. As she still refused any surgery, I was asked to see her on October 1, 1959, with a view to radiotherapy. She was admitted to Redruth

Hospital on October 6. Further x-ray films showed that the whole of the ascending ramus, including the coronoid process and angle of the mandible, was completely destroyed (Fig. 2). On October 9 a biopsy, under local anaesthesia, was performed from inside the mouth. The sections showed the typical features of an adamantinoma (Fig. 3).

Deep x-ray therapy was given from October 6 to November 20; tumour dose to centre of mass was 3,750 r in 45 days.

The external swelling gradually diminished during and after treatment and the fungations inside the mouth disappeared. A bony swelling, due to the expanded mandible, remained and a small hole in the mucosa led into a cavity. An x-ray film taken on July 1, 1960, showed considerable recalcification, the majority of the right ramus now being visualized. A further film on April 14, 1961, showed that the mandible had been further reconstituted (Fig. 4). Figs. 1 and 5 show the striking change in the patient's appearance before and after treatment.

Comment.—All the authorities quoted refer to the long period which may elapse between apparently successful treatment and recurrence of adamantinoma. While it is as yet too early to assess this patient's long-term prognosis, the results up to the time of writing have been sufficiently good to encourage reconsideration of the role of radiotherapy in this condition.

I should like to express my appreciation of the help given by Mr. A. G. Parsons, superintendent radiographer, and Miss P. Coleman, clinical photographer, in the preparation of this paper.

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REFERENCES

- Bonta, J. A., and James, A. G. (1955). *Ann. Surg.*, **142**, 1007.
 Fitzgibbon, G. M., Shanks, W., and Fickling, B. W. (1952). *Proc. roy. Soc. Med.*, **45**, 705.
 Hickey, M. J., Ballantyre, L. W., Macdonald, J. A., and Rankow, R. M. (1956). *Amer. J. Surg.*, **92**, 852.
 MacWhirter, R. (1952). *Proc. roy. Soc. Med.*, **45**, 701.
 Schobinger, R. (1958). *Oncologia (Basel)*, **11**, 71.

FIG. 4.—Later x-ray film of mandible on April 14, 1961, 16 months after treatment.

FIG. 5.—Patient's appearance on September 30, 1961, 21 months after treatment.