time both the power and the size of the affected muscle had returned to normal.

COMMENT

There can be little doubt that the injury to the left spinal accessory nerve in this case was due to pressure from the sling which was worn for the injury to the right shoulder; possibly the knot in the sling had pressed on the nerve for a considerable period. The attack of pain, at first thought to be fibrositis, was almost certainly due to degeneration occurring in the damaged nerve. The nerve in its course across the posterior triangle of the neck is liable to injury from pressure in this way as well as from penetrating wounds or block dissection of the region. An injury in this situation would of course spare the branch to the sternomastoid and account for the fact that this muscle was not affected in the above case.

In all instances of spinal accessory nerve palsy it should be ascertained whether a sling had been worn before the onset of the palsy. It is apparent that the wearing of a sling for more than two or three days is not without risk, and care should be taken to pad it and to ensure that the knot does not lie over the posterior triangle of the neck.

I wish to thank Dr. N. Hamilton Fairley, F.R.S., and Squadron Leader R. Hughes, R.A.F.V.R., for comments and advice on the case.

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REFERENCE

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"Benadryl" in Treatment of Oxyuriasis

Attention was recently drawn by an observant mother to the case of her asthmatic child—a girl aged 7—who had been treated with "benadryl." After three weeks' medication not only did the severity of the nocturnal dyspnoea abate but a concomitant threadworm infestation disappeared. Previously, gentian-violet enteric-coated tablets were tried, but on account of intractable vomiting the patient vigorously refused to swallow them. It should be noted that this child needed and tolerated substantial doses of benadryl to control and minimize the severity of her asthmatic attacks.

Following this experience I decided to treat at random a number of established cases of oxyuriasis and to observe their reactions to benadryl. Ten such patients, ranging between the ages of 6 and 12, were treated. The dosage used was 50 mg. once a day for patients up to the age of 8, and 50 mg. twice a day for those from 8 to 12. The course lasted nine days. Only one of these 10 remained free of worms five weeks after the trial, and close inquiry elicited that at the time of treatment the patient had had an attack of gastro-enteritis which resulted in five days' diarrhoea. As the other nine did not have diarrhoea, it is justifiable to assume that this occurrence was independent of the drug; also that the diarrhoea may have enabled a substantial portion of the drug to reach the lower bowel, where the adult and maturing female worms are to be found.

Accordingly the manufacturers of benadryl were consulted, and they made a tablet ("emplet") the coating of which disintegrates only when the level of the lower gut is reached. It has been established that the colon is concerned with the absorption of water, but few drugs or food constituents are taken up by this organ. With the emplets one could expect most of the drug to reach the site where its action is most needed, and where dilution by absorption is not likely to be a serious difficulty; also, systemic toxic

manifestations should be fewer, enabling a larger dosage to be given.

A series of four patients (aged 6, 7, 11, and 12) were treated, using a dosage of 10 mg. three times a day for nine days. Toxic manifestations such as drowsiness and dizziness were not encountered. In the first benadryl series drowsiness appeared in six cases. Ten days after the end of treatment worms were found in the older subjects, and further observation revealed that the two freed cases had relapsed in the fourth week after treatment. These subjects were now given 25 mg. three times a day for nine days. Again no toxic symptoms were elicited, and the patients remained free seven weeks after treatment.

Following this another series of 10 cases were treated. Their ages were as follows: two aged 7, two aged 8, one aged 11, three aged 12, one aged 14, and one (the mother of one of the children) aged 28. The dosage given was 50 mg. twice a day to the nine children and 50 mg. three times a day to the adult. Again no toxic symptoms were noted, and all cases remained clear seven weeks after treatment. No emplets were refused on account of toxic symptoms, as was the case with gentian violet.

All subjects so far treated were given appropriate instructions against reinfection. With pre-school and school-children very little reliance can be placed on the faithful observance of such instructions. Therefore a further seven consecutive cases were treated: all patients were between the ages of 6 and 12, the dosage was 50 mg. twice a day, and instructions against reinfection were deliberately omitted. No untoward symptoms developed, and six of these patients remained free five weeks after the end of the nine-day course. The remaining case was free three weeks after treatment, but relapsed during the fourth week. On inquiry it was ascertained that a playmate who was an immediate neighbour was heavily infested. Simultaneous treatment of both children resulted in cure five weeks after treatment.

Two boys aged 4 and 4½ years were given one 50 mg. emplet a day; difficulty was encountered in getting these patients to swallow it, but one of them managed to do so when the emplet was enclosed in a morsel of cake: and nine days' treatment sufficed to effect a cure.

The parents of patients under treatment were instructed to examine their children about one hour after retirement each night. It was ascertained that worms ceased to appear near the perineal region between the third and the seventh day after the beginning of the course, and in the majority they had disappeared by the fifth day.

A suitable dosage of benadryl in emplet form for the treatment of oxyuriasis is as follows:

Age 2 to 5, 50 mg. once a day (one emplet) for ten days.
Age 6 to 12, 50 mg. twice a day (two emplets) for 10 days.
Over 12 years, 50 mg. thrice daily (three emplets) for 10 days.

Emplets must be swallowed whole; division or chewing vitiates efficacy.

My thanks are due to Dr. J. S. White, of Messrs. Parke, Davis and Co., for his willing co-operation in supplying specially prepared experimental samples of emplets.

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