

A MANUAL EXERCISER OF TEMPORO-MANDIBULAR JOINT FOR CHILDREN

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SUMMARY

A simple jaw-exerciser which has been fabricated in our hospital workshop in May, 1984 is being described. It can be safely and effectively used in children post-operatively, and has been found to be quite acceptable to them.

Good results for temporo-mandibular joint ankylosis are nulled by the problem of recurrence. Post-operative jaw-opening exercises are essential to prevent recurrence of ankylosis. Various static and dynamic jaw-exercisers have been described (Alagumba L. Nwoku, 1978, Erwin C. Lubit, 1980 and Viadas, Gaurisa, 1975), but all of them have been used in adult patients. We have designed a "Hinge and Spring" jaw-exerciser for younger patients which can be manufactured in any hospital workshop.

The design of the exerciser

The jaw-exerciser is made of stainless steel (Fig. 1). It comprises of three components; (i) The jaw-plates are padded with micro-rubber (ii) The long and curved handles (iii) A hinge and a spring in the middle i.e. at

the junction of jaw-plates and the handle. On pressing the handles, the hinge and the spring permit opening of jaw-plates which is almost equal to the height of the rubber wedge, used as a bite block after surgery (Fig. 2).

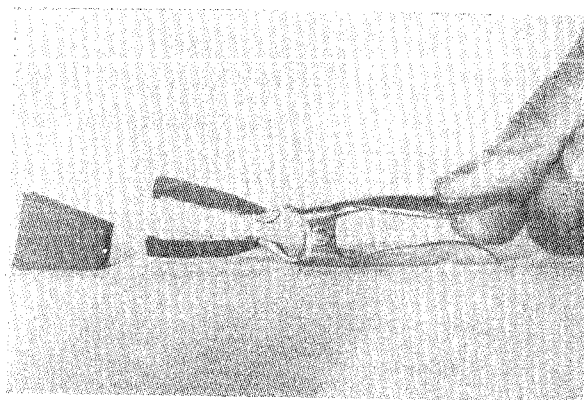


Fig. 2. On pressing the handle, the jaw-plates open up to the desired height of a rubber wedge.

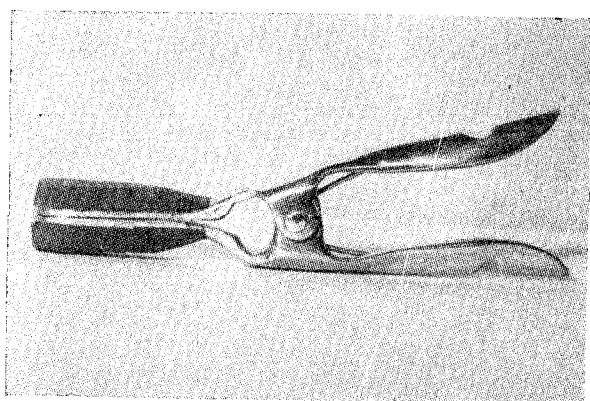


Fig. 1. Our jaw-exerciser comprising of a handle, a hinge and spring and two jaw-plates.

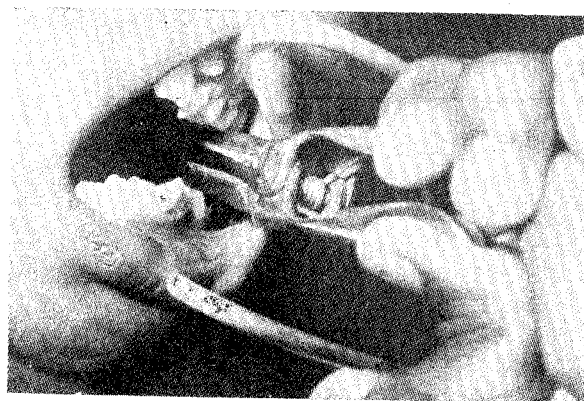


Fig. 3. Opening of jaw-plates result in opening of mouth and stretching of muscles of mastication.

The mechanisms of action of this simple appliance is as follows. The padded jaw-plates are placed in between the maxillary and mandibular premolar and molar teeth. On pressing the handles together, the jaws open out and this results in opening of the mouth and stretching of the muscles of mastication (Fig. 3). Releasing the pressure on handles results in closure of the jaw-plates and thus in relaxation of the muscles too.

The amount and duration of pressure applied over the handles in order to open the jaw-plates are under complete control of the patient himself, hence can be kept within the range of comfort. To avoid undue discomfort and pain it is advisable to start using this exerciser after the tenth post-operative day and until then a rubber wedge is used as a static splint. The pressure applied over the handles to open up the jaws is "Gradually increased", to suit the patient's tolerance.

Discussion

The need for designing jaw-exercisers suitable for use in children are evident from the

increasing number of younger patients undergoing arthroplasty for temporomandibular joint ankylosis. However, a later review regarding function and growth of early surgical correction in the children would confirm the effects of early surgical correction in children (Alagumba L. Nwoku, 1979). Erwin C. Lubit in 1980 described an appliance for restoring mobility in false ankylosis. Using a similar principle of applying positive intermittent force over jaw-plates, we designed a simpler appliance which can be used by children themselves with little training.

Conclusion

The jaw-exerciser has a simple mechanism and can be easily fabricated in different sizes. It is quite handy. Children enjoy carrying it in their pockets and using it as per advise given to them. Children above six years of age having average intelligence, accept the exerciser well. The co-operation of the parents and their active participation in a child's training are essential for achieving better results.

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