MODIFICATIONS TO THE KELSEY FRY BONE AWLS FOR
USE IN CIRCUMPALATAL WIRING

A. W. GORDON MACLEOD, B.D.S. F.D.S.R.C.S.(ED.)¹ and G. J. P. SOCKETT, B.D.S.
F.D.S.R.C.S.(ED.)²

¹ Oral Surgery Department, Dundee Dental Hospital, Dundee, Tayside; ² Ninewells
Hospital Medical School, University of Dundee, Dundee, Tayside.

Summary. A simple modification to the Kelsey Fry Bone Awls is described for use in circumpalatal
wiring of an appliance to the edentulous maxilla.

Introduction

The technique of circumpalatal wiring as a method of retaining an upper appliance
firmly in place, as described by Madan (1973) is now in common use. After a hemi-
maxillectomy the use of an appliance enables a bung to be held into the defect to
support a split skin graft and also helps the patient to eat and speak more easily.

An internal means of fixation by which the appliance can be held in place avoiding
the cumbersome use of extra-oral fixation to the cranium is of benefit to patient and
anaesthetist. If the zygoma has been removed along with the tumour, the use of cir-
cumzygomatic suspension wires is impossible. Wires suspended from the frontal region
will interfere with any skin graft and bung inserted on the resected side. Therefore,
provided the nasal septum is left intact, a circumpalatal wire along the floor of the nose
on the non-resected side, is an ideal method to use. This method can also be used to
manage facial fractures requiring an upper Gunning splint, especially those cases
where there is insufficient alveolar bone through which to pass peralveolar wires. A
further application is to aid the retention of an appliance carrying a buccal inlay for sulcus deepening procedures.

**Method**

We have modified a curved Kelsey Fry Bone Awl firstly by placing a 90 degree bend 1 cm from the tip (Fig. 1). This enables the awl to be passed through the soft palate just posterior to the hard palate more easily, following its introduction into the anterior

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**Fig. 3.** The appliance is fitted with an anterior and posterior cleat.

**Fig. 4.** Shows the appliance secured in position.
nare and along the nasal floor. The second modification is the provision of a second hole of similar size, close to the original hole in both the bent awl and the straight awl (Fig. 2). This enables both ends of the circumpalatal wire to be pulled anteriorly along the nasal floor and out of the nares, using the bent awl. The straight awl is then passed up through the maxillary labial sulcus into the nose, close to the anterior nasal spine. Both ends of wire are transferred to the straight awl, and pulled down into the mouth for attachment to the appliance. The use of the second hole means both wire ends are passed at the same time, which reduces further soft tissue damage.

A grafted cavity has to be inspected from time to time, so it would be an advantage to be able to remove the appliance, whilst leaving the circumpalatal wire in place for re-use, thereby possibly avoiding the necessity for a further general anaesthetic. To enable us to do this, we use two cleats, one at the posterior margin of the appliance instead of the holes as described by Madan, and another on the labial flange (Fig. 3). After the circumpalatal wire has been passed, the free ends are twisted above the labial cleat, and then attached to the cleat using a second twisted loop of wire (Fig. 4). To remove the appliance, only this second wire need be cut, which allows the circumpalatal wire to be released from around the posterior cleat (Figs. 5a & b), thus releasing the appliance. The circumpalatal wire remains intact for further use.

![Fig 5 (a) (left) shows the auxiliary wire loop anteriorly. (b) (right) shows the posterior end of the circumpalatal wire.](image)

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