# TRANSFACIAL ACCES TO THE RETROMAXILLARY AREA AND SOME TECHNICAL MODIFICATIONS

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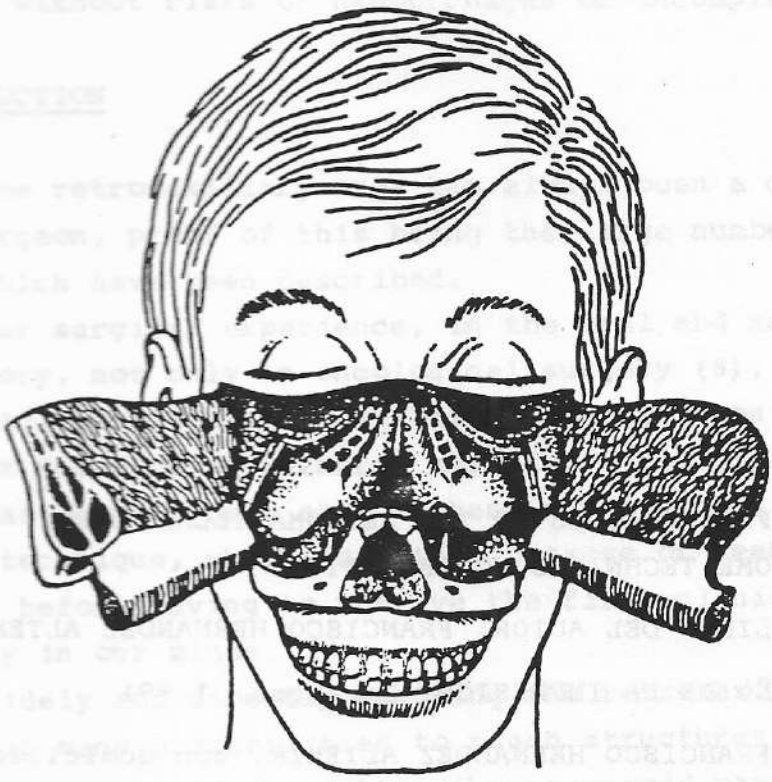

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# TRANSFACIAL ACCESS TO THE RETROMAXILLARY AREA

By: Francisco Hernández Altemir, M.D., D.M.D.

## ABSTRACT

A new technique on how to reach the retromaxillary area is described and also some modifications which are at the moment being studied and applied. Its aim is to obtain a surgical field which is sufficiently large enough to treat mainly, tumoural processes located in an area, which when exposed have been preceded until now by important mutilations, or - else, fields which were so small that no guarantee was offered, in order to be able to erradicate certain kinds of tumours, without risks of haemorrhages or incomplete removals.

## INTRODUCTION

The retromaxillary area has always been a challenge for the surgeon, proof of this being the large number of techniques which have been described.

Our surgical experience, in the oral and maxillofacial territory, not only in oncological surgery (8), but also in traumatological techniques (11), of deformities, etc., and without doubt other authors' experience (1,7,15,19 and 20), are what we have been able to base ourselves on to conceive a new technique, which has arisen because of need and which - maybe before having to resolve the first clinical case, was already in our minds.

Widely and directly exposing the retromaxillary area - opens up many possibilities to reach structures in the base of the cranium, of the orbit, the pterygoid maxillary area, nasal area, cavum, clivus, sphenoid sinus, temporal zygomatic region, etc. etc. (9, 10,12).

## MATERIAL AND METHOD

We will find out the magnitude of the process to be treated by a meticulous study of the clinical case, by means

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of tomographies, scanner and with images of magnetic resonance and even with angiography by digital substraction of images, based of course, on a correct history and detailed clinical exploration, etc. Preoperatory biopsic studies can be contraindicated (3,6).

If mainly cavum angiofibromas are suspected there must be sufficient crossed blood (2,4), although the surgical field is controlled much better now with our access.

Nasotracheal, submental (13,14) intubation or tracheostomy will be chosen according to the characteristics and location of the tumoural process.

The environment in which we have to carry out the technique will make a trachostomy the most advisable the majority of times.

In hospitals with many facilities, Intensive Care Units, etc. the nasotracheal or submental intubation can give us sufficient guarantees, both in the operation and in the postoperatory surveillance.

If the transfacial access technique is bilateral or in other ways which we describe, the tracheostomy or submental intubation may be indicated. The tracheostomy or submental intubation, both unilateral and bilateral, can only be avoided, if we perform the so-called minor transfacial access techniques, the orotracheal or contralateral nasotracheal intubation being sufficient in general, as will be understood later on, not wishing to go further into this at the moment.

As a base we are going to give some technical details of what I now call, <u>larger unilateral access technique to the retromaxillary area</u>, which we have experience of. We will set forth the descriptions of the techniques which have been derived from it in an even more schematic way, with some small notes on the drawings.

So, in the description of this <u>greater unilateral technique</u>, the incisions in the skin and mucosas and the osteotomy lines can be seen in a series of drawings which we call BASIC SERIES, and which go from figure 1 to figure 9.

The vertical incision of the vestibular mucosa must not coincide with the palatine alveolus osteotomy line (fig. 5).

The osteotomies of the palatine region are preceded by the lifting of the fibromucosa after incision which follows the neck of the dental pieces in their palatine portion and whose prolongation in the tuberositary areas can be used for osteotomies in the pterygomaxillary regions.

Once the osteotomies have been performed, the luxation of the maxilla is carried out with the instruments already designed, which make the disjunctions easier. The luxation can at times be done manually, although with the help of an instrument to separate the soft parts, such as the nasal fibromucosa, etc.

The suborbitary nerve may make the displacement of the maxilla difficult, having to divide it into sections and mark it, in order to suture it from end to end in the reconstruction.

Depending on the type of tumour or process to be treated, it may be advisable or not to control beforehand the carotid vessels, mainly the external carotid, which can be clamped and after removing the tumour, freed, watching, of course, the operatory bed (18).

In our cases we have thought it advisable to carry out a temporary tarsorrhaphy.

Below, as we have mentioned above, we describe other modifications which are being studied, with their relative denomination and with some small notes at the bottom of the figures, trying, in this way, not to make the text confused.

BASIC SERIES

Greater Unilateral Technique

Generalities:

Figs. 1 to 9.

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Greater unilateral technique including internal and external structures

Figs. 10 to 17.

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OTHER POSSIBILITIES

Minor unilateral technique

Fig. 18.

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Greater bilateral technique

Figs. 19 to 25.

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Two pedicle minor bilateral technique

fig. 26.

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Greater bilateral technique en block which includes nasoethmoidal and septal structures pedicled to one side.

Figs. 27 to 32.

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Minor bilateral technique which includes one pedicle nasoethmoidal and septal structures

Figs. 33 to 38.

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Intraoral technique with supraapical, pterygomaxillary and septal osteotomies.

Figs 39 to 43.

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Pyramidal technique with the osteotomized block pedicle to the palate.

Figs. 44 to 50

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Photograph of the fire enamel which represents the greater unilateral and bilateral technique.

Fig. 51.

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DISCUSSION

If the techniques are correctly performed, very favourable cosmetic and functional results are obtained, due mainly to the fact that it is not necessary to sacrifice maxillary, or dental structures, respecting the oseous architecture of the maxillas, because as we have pointed out, the line of the osteotomies permits the directed luxation of the maxilla(s), with which, apart from exploring them, we also separate them from the surgical field, which is going to give - access to the retromaxillary region and adjacent areas. - These in turn can also be extended, so that our surgical progression can let us exceed the pterygomaxillary region, the clivus, etc., and even the clefts and foramens of the base of the cranium, with what all this means.

The wideness of the surgical field, thus obtained, makes it easier to examine the areas and the exeresis of the tumours found on this level. As a result of this, relapses due to incomplete removals are less common, although we do not have enough statistics to affirm this, and we only mention it due to pure logic.

Vascularization of the upper luxated maxilla is sufficient, on being pedicled to the cheek and as this receives great part of the irrigation, through the transverse facial artery.

In the bilateral techniques the face remains open like a book, the central incisors, the nasal septum and the paramedical palatine structures will serve as points of reference for our reconstructing osteosynthesis.

Since we described out technique (9,10), new authors have contributed, as we have already said, modifications, which is quite normal (5,16), or else real new techniques (17), with similar intentions of reaching the retromaxillary areas, etc.

Once more, the oral and maxillofacial surgeon has used the examples which everyday clinical cases offer us to develop his techniques. I refer, mainly, now to the design of

the osteotomies, which often are only a real copy of those which occur accidentally in traumatisms of different kinds.

We wish to point out how the techniques which I have called minor ones, and in general, those that respect the insertion of the palatine fibromucosa, are less traumatic and also let us use the palatine pedicles to design other forms of access to the retromaxillary, ethmoidal, rhinopharynx areas, etc., etc. (12), as can be seen in our series of drawings.

The photograph of the enamel which we show at the end of the text (Fig. 51 ) serves as a summary of this work, where what has been attempted, more than setting forth a technique, is to point out the philosophy of access to the retromaxillary areas, according to our criteria.

THANKS

To the patients themselves and their relations who, because of their anguish and fears, have forced us to look for less traumatic and safer therapeutic means.

To Ms. María Pilar Gracia Miranda, who accepted our indication to make the enamel, recovering perhaps, an ancient means of publication which can have its charm in an era with publication means as sophisticated as ours.

LEGENDES

BASIC SERIES

## Greater Unilateral Technique

### Generalities:

Figs. 1 to 9

Fig. 1.- How to reach the pterygomaxillary region.

Fig. 2 and 3.- Entry by opening the upper maxilla
Description of the greater unilateral technique.

Fig. 4.- Cutaneous incision.

Fig. 5.- Incisions in the vestibular and palatine mucosa, at points, detail of the osteotomy line.

Fig. 6.- Most common course and order of the osteotomies 1, 2, 3, 4, 5 and 6.

Fig. 7.- Pterygopalatine osteotomies 5 and 6.

Fig. 8.- Luxated maxilla

Fig. 9.- Final aspect after completing the osteotomies and with maxilla mobilized.

## Greater unilateral technique including internal and external structures

Figs. 10 to 17.

Fig. 10.- Cutaneous incisions, the left subpalpebral can be extended along the whole line of dots.

Fig. 11.- Incisions in the vestibular and palatine mucous in thick line. on dots line osteotomies.

Fig. 12.- Osteotomies 1,2,3,4,5 and 6.

Fig. 13.- Right-hand side view of the osteotomies 1,2,3,4,5.

Fig. 14.- Left-hand side view of the osteotomies 4,3',6.

Fig.15 .- The whole of the upper left maxilla has been mobilized and part of the right-hand one.

Fig. 16.- Aspect of the operatory field after performing the mobilization of the maxilla and the nasal structures.

Fig. 17.- The same aspect of fig. 16, only greater decollement of the soft parts of the left side and of the upper left vestibular mucous in the vestibular base.

## OTHER POSSIBILITIES

### Minor unilateral technique

(It does not include the infrastructure of the hemimaxilla which is pedicled or mobilized).

Fig. 18.- The intermaxilla relation is kept whole!

## Greater bilateral technique

Figs. 19 to 25.

Fig. 19.- Cutaneous incisions.

Fig. 20.- Incision in the palatine fibromucosa, which will unstuck.

Figs. 21 and 22.- Osteotomies 1,2,3,4,5,6 and 1',2',3',4',5',6' corresponding to the right and left sides respectively.

Fig. 23.- Pterygomaxillary and palatine osteotomies 5,6 and 5',6'.

Fig. 24.- The maxillas separated from the pterygoid and paraseptal regions.

Fig. 25.- Final aspect, the face is open like a book!

## Two pedicle minor bilateral technique

(It does not include the infrastructure of the maxillas).

- The oseous structures which limit the maxillary sinuses are displaced from one side to another.

Fig. 26.- If necessary the maxillary infrastructures can be luxated or fractures at pterygomaxillary and septal level in this way drop the dental alveolus and palatine portions in bloc, with which the pterygomaxillary area is reached more easily.

Greater bilateral technique en bloc which includes nasoethmoidal and septal structures pedicled to one side.

Figs.- 27 to 32

Fig.27.- Cutaneous incisions

Fig.28.- Incision in the palatine fibromucosa which will be unstuck.

Figs. 29, 30 and 31.- Osteotomies 1,2,3,4,5 and 1',2',3',4',5'. The disjunction of the ethmoidal and septal structures is obtained with the chisel.

Fig.32 .- Final aspect. The contens of both maxillas and the nasal and ethmoidal structures are contained in the lateral flaps, specifically in the figure, on the right-hand side.

Minor bilateral technique which includes one pedicle nasoethmoidal and septal structures

Figs. 33 to 38

Fig.33.- Cutaneous incisions.

Fig.34.- Incision at the bottom of the vestibular and tuberositary mucosa.

Figs.35, 36 and 37.- Osteotomies 1,2,3,4,5,6 and 1',2',3',4',5',6'. The chisel achieves the disjunction at base of craneum level (4) and in the caudal region with another ad hoc, the causal section of the nasal septum (6).

Fig.38 .- Final aspect, the pterygopalatine region remains fixed to the pterygoid structures (if necessary it can be luxated, with which the surgical field is widened), the advantage being that the palatine fibromucosa does not have to be unstuck, with which the surgical traumatism noticeably decreases.

Intraoral technique with supraapical, pterygomaxillary and septal osteotomies.

Figs. 39 to 43

Fig. 39.- Line of incision at the base of the vestibule and tuberositary regions.

Fig. 40.- Osteotomies 1,2 and 1'.

Figs. 41 and 42 .- Osteotomies 1,2,3 and 1',3'.

Fig. 43.- Intraoral view of the nasal floor and sinumaxillas,access to the cavum, etc.

Pyramidal technique with the osteotomized block pedicle to the palate

Figs. 44 to 50.

Fig. 44.- Incisions at level of the soft parts of the face.

Fig. 45.- Incision line at base of the vestibule and tuberositary region.

Fig. 46.- Path of the osteotomies.

Fig. 47.- Osteotomies 1,2,3 and 1′,2′. Osteotomies 2, 2′,3 , will change their path (fine dots), if we wish to achieve the result shown in fig. 50.

Figs. 48 and 49 .- Osteotomies 1,2,3,4 and 1′,2′,3′,4′.

Fig. 50.- The block dropped, the ethmoidal, esphenoidal region, cavum and pterygomaxilla area is seen.

Fig. 51 .- Photograph of the fire enamel which represents the greater unilateral and bilateral technique.

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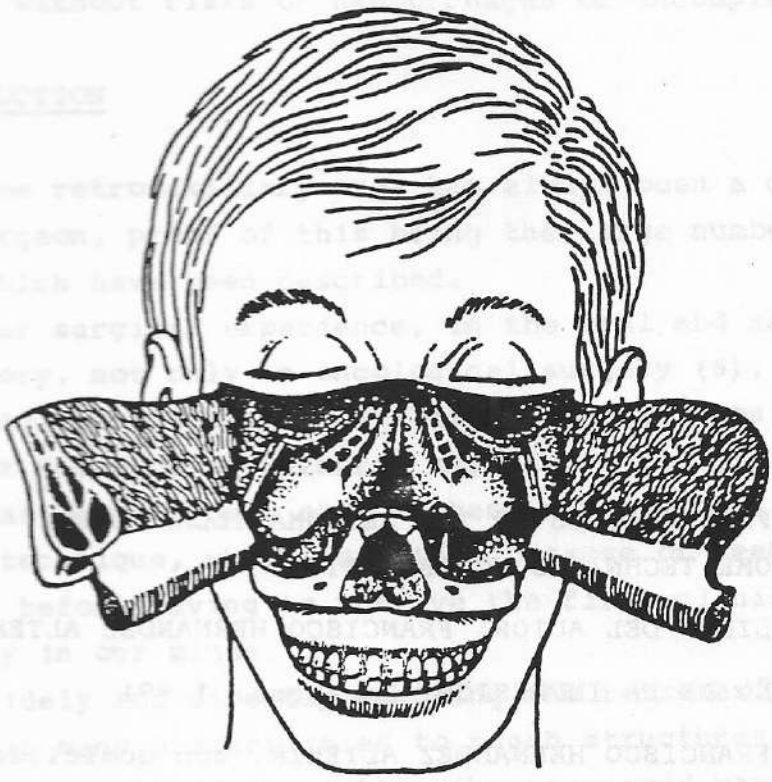

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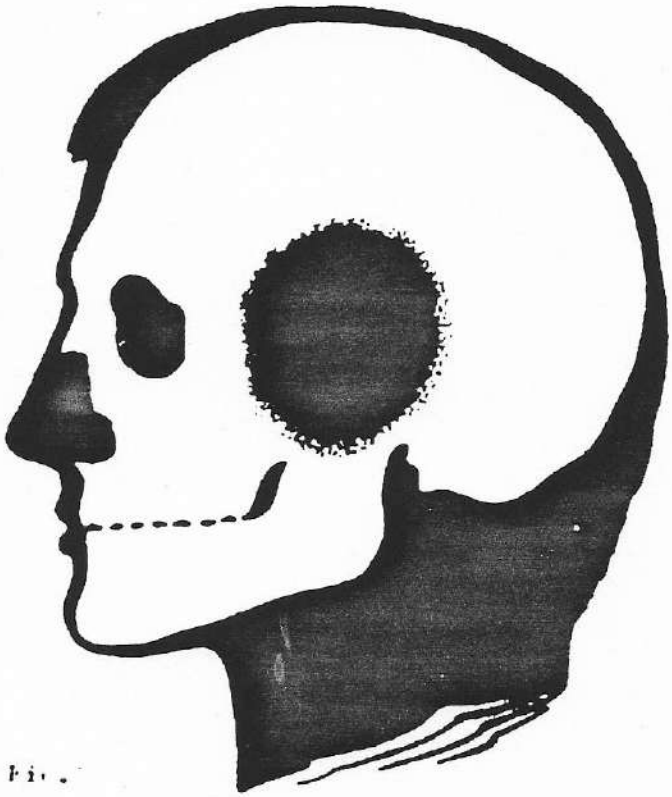

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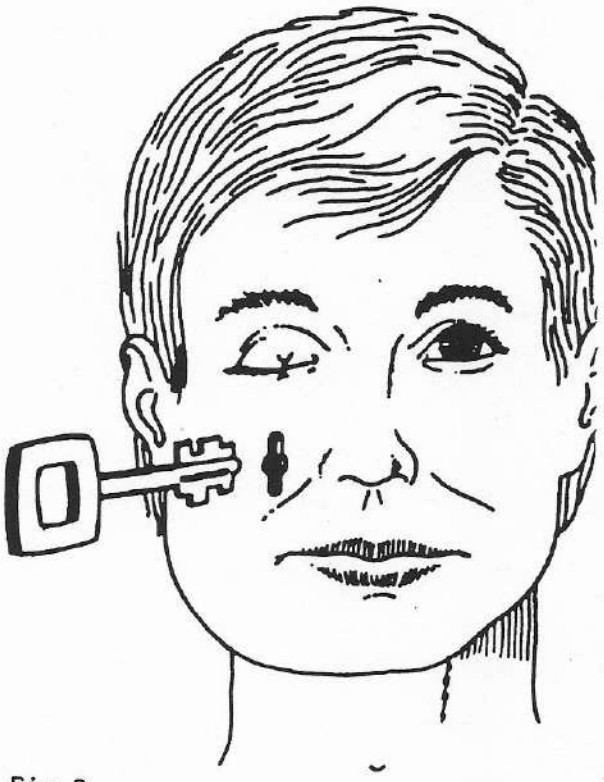

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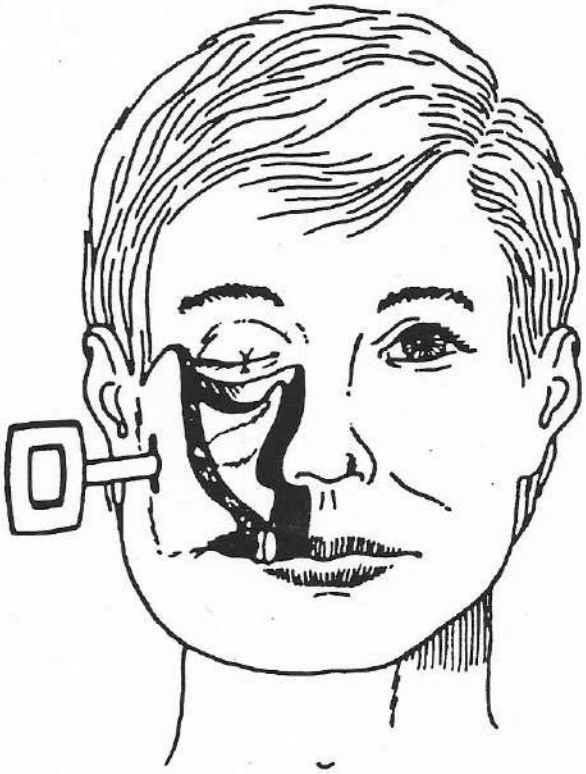

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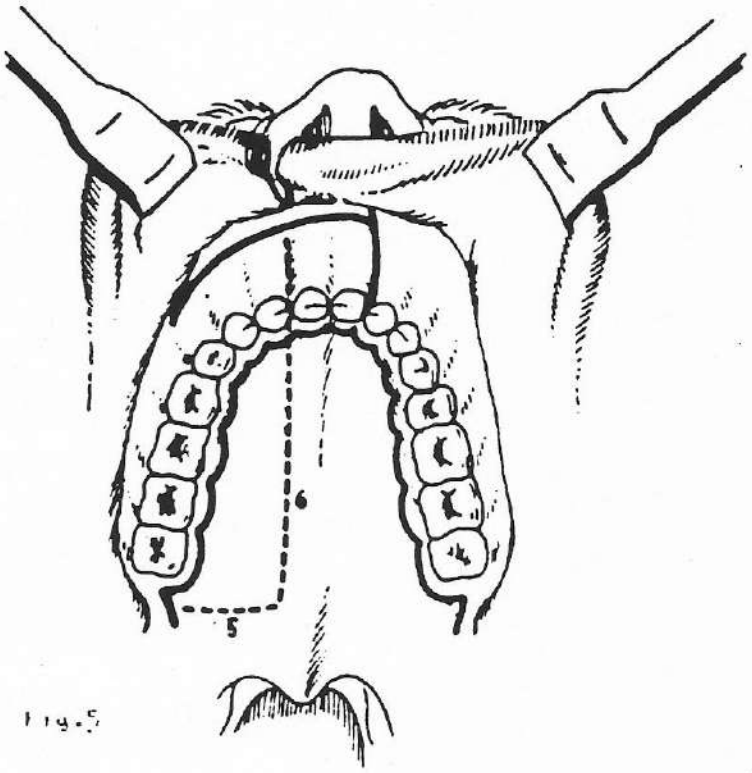


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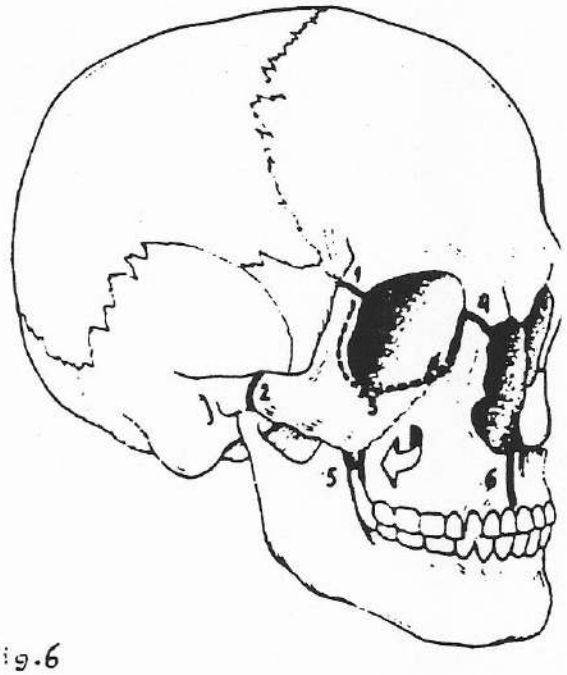


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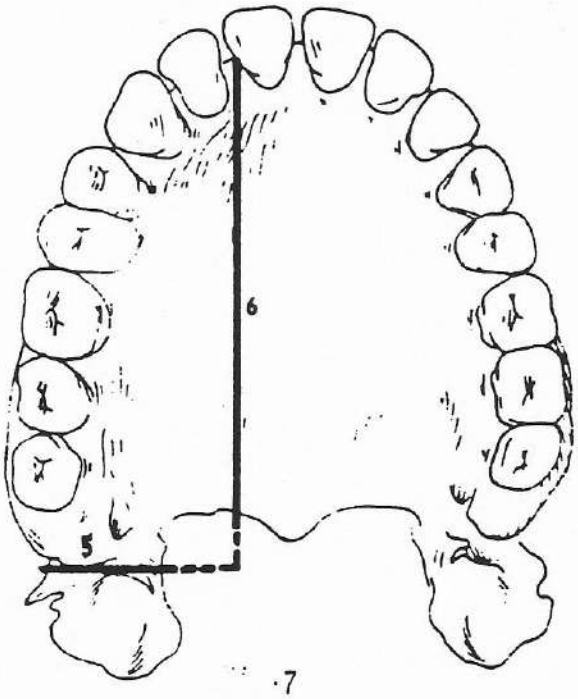


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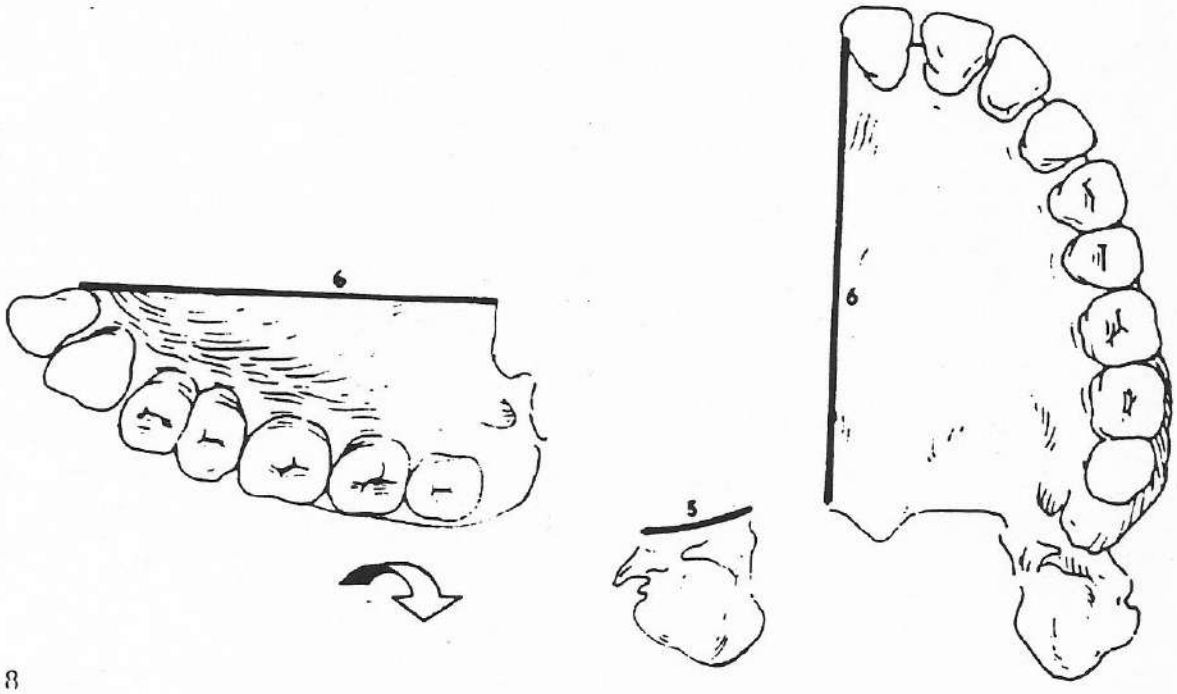


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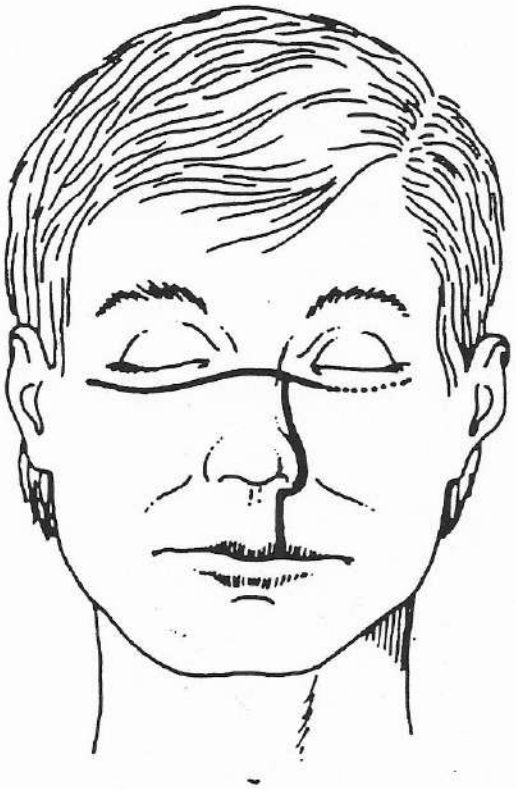
Fig.9



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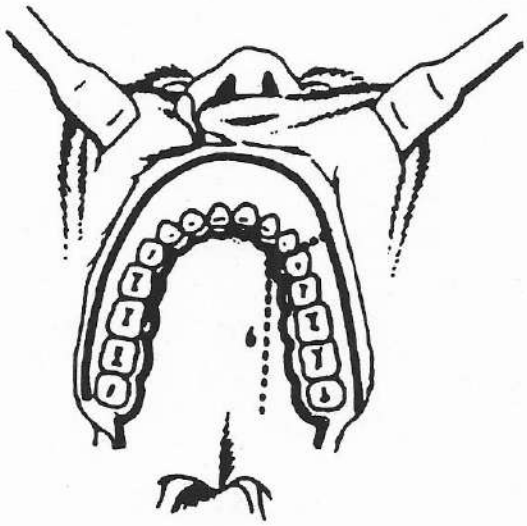

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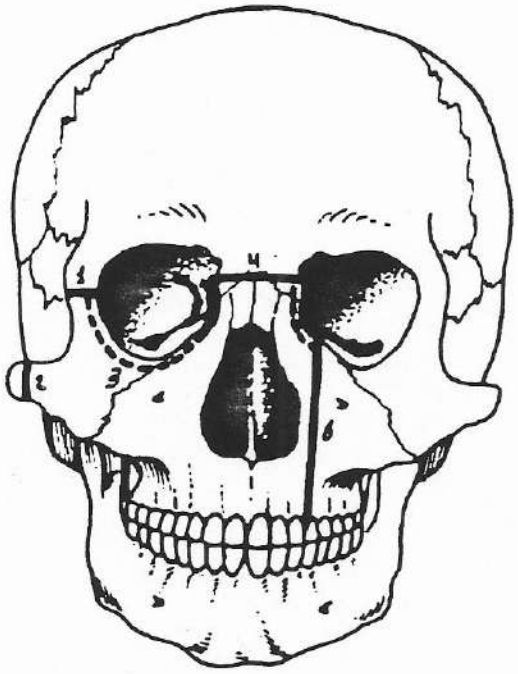

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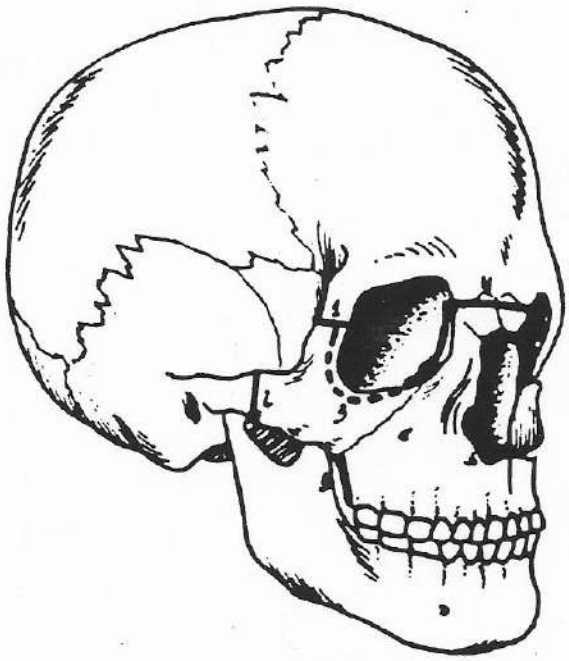

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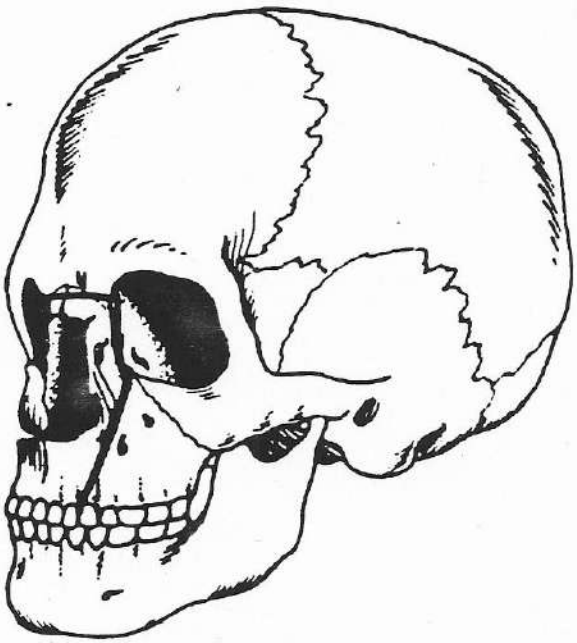

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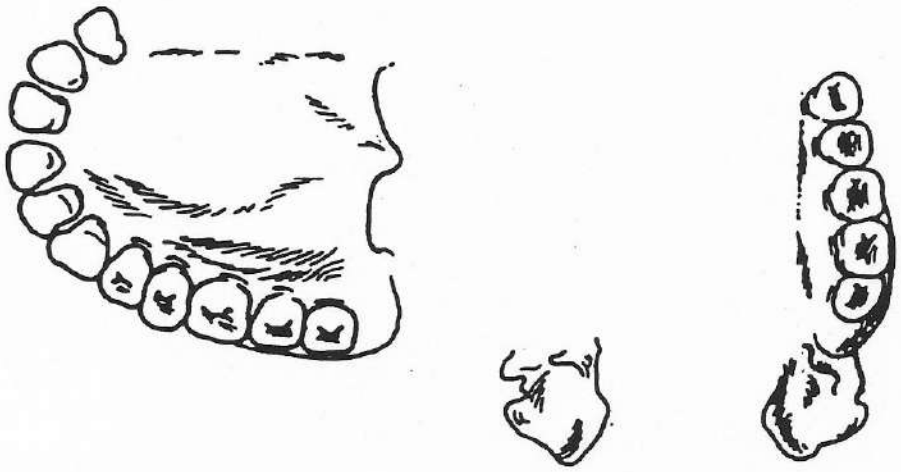

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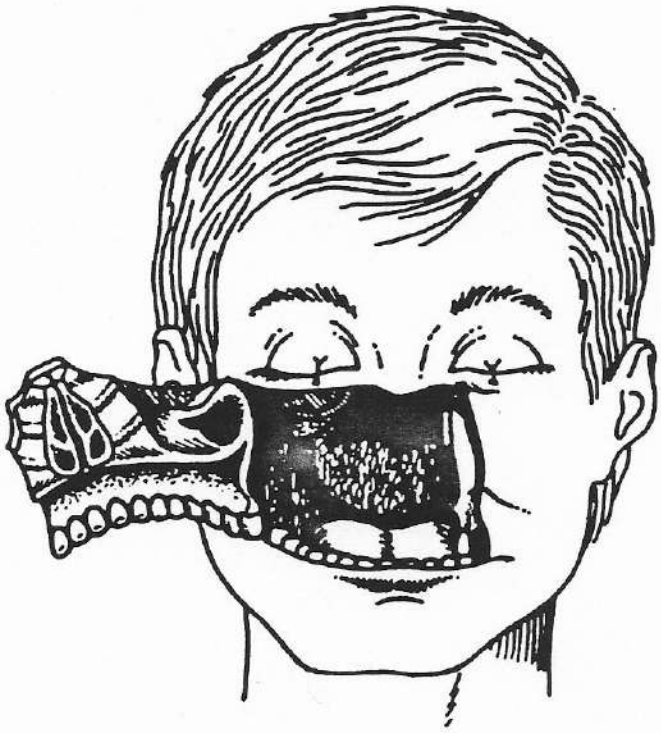

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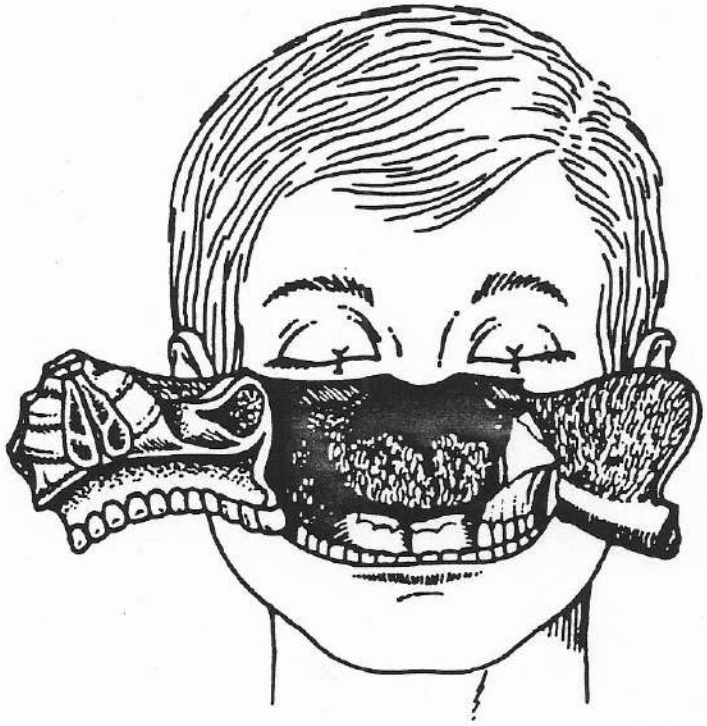

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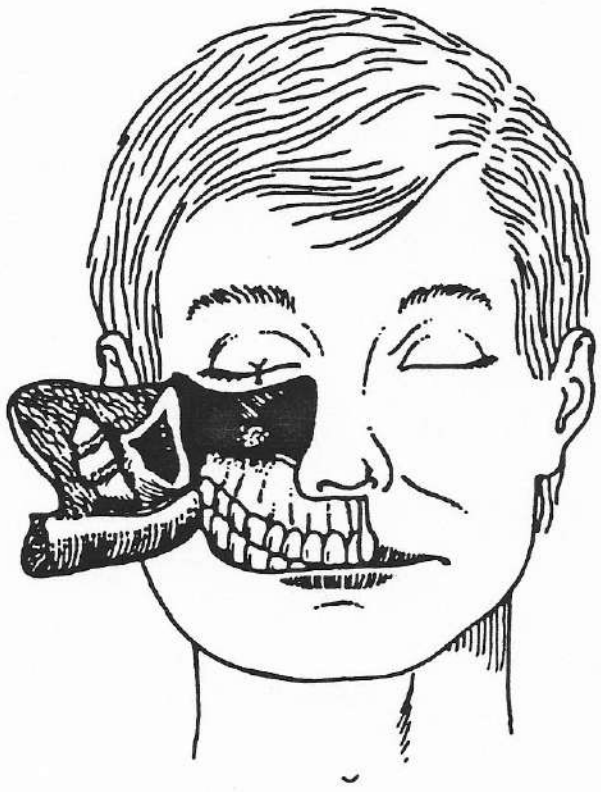

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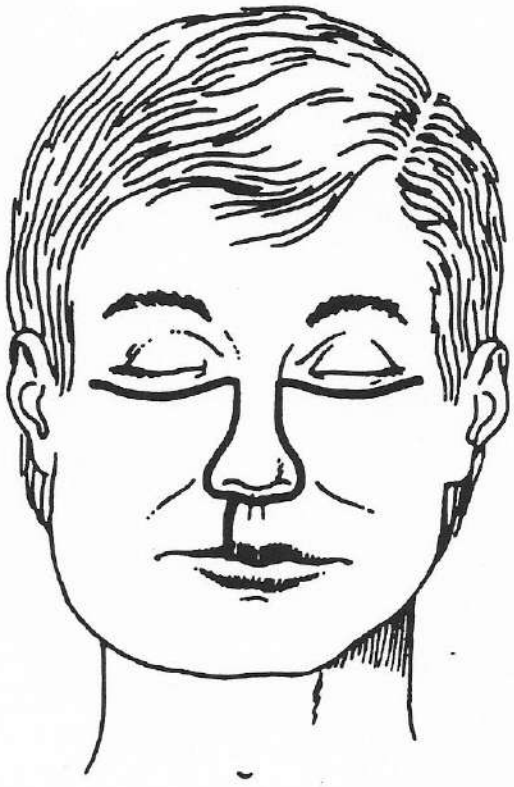

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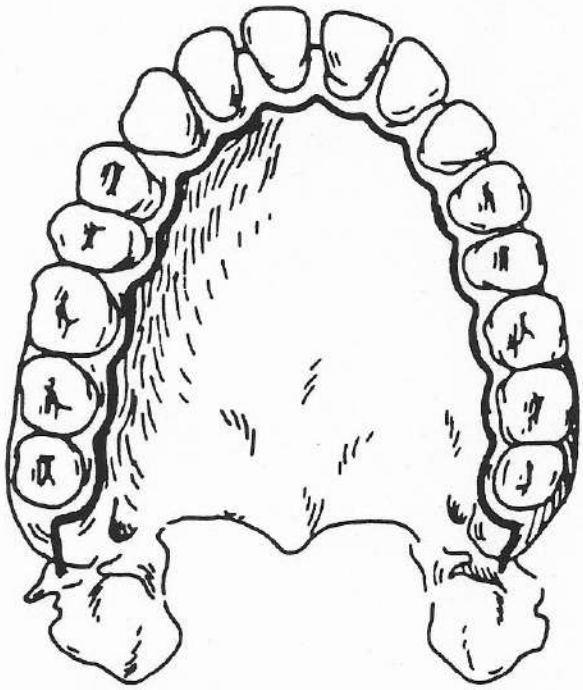

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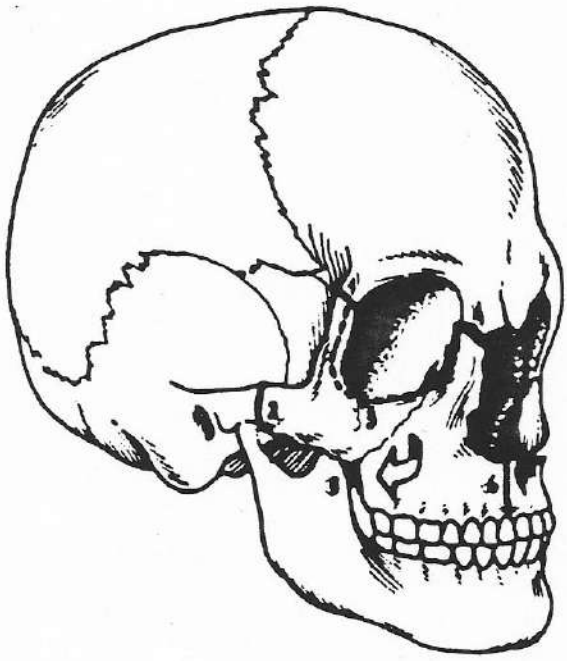

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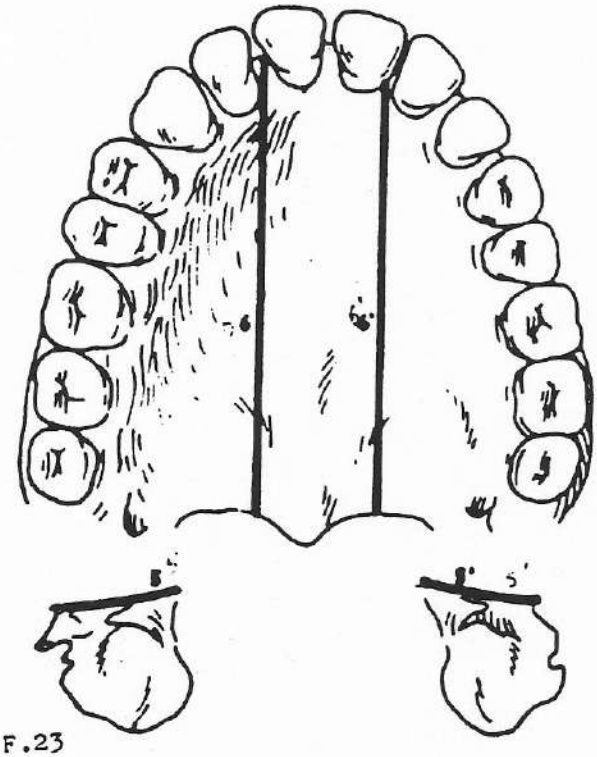

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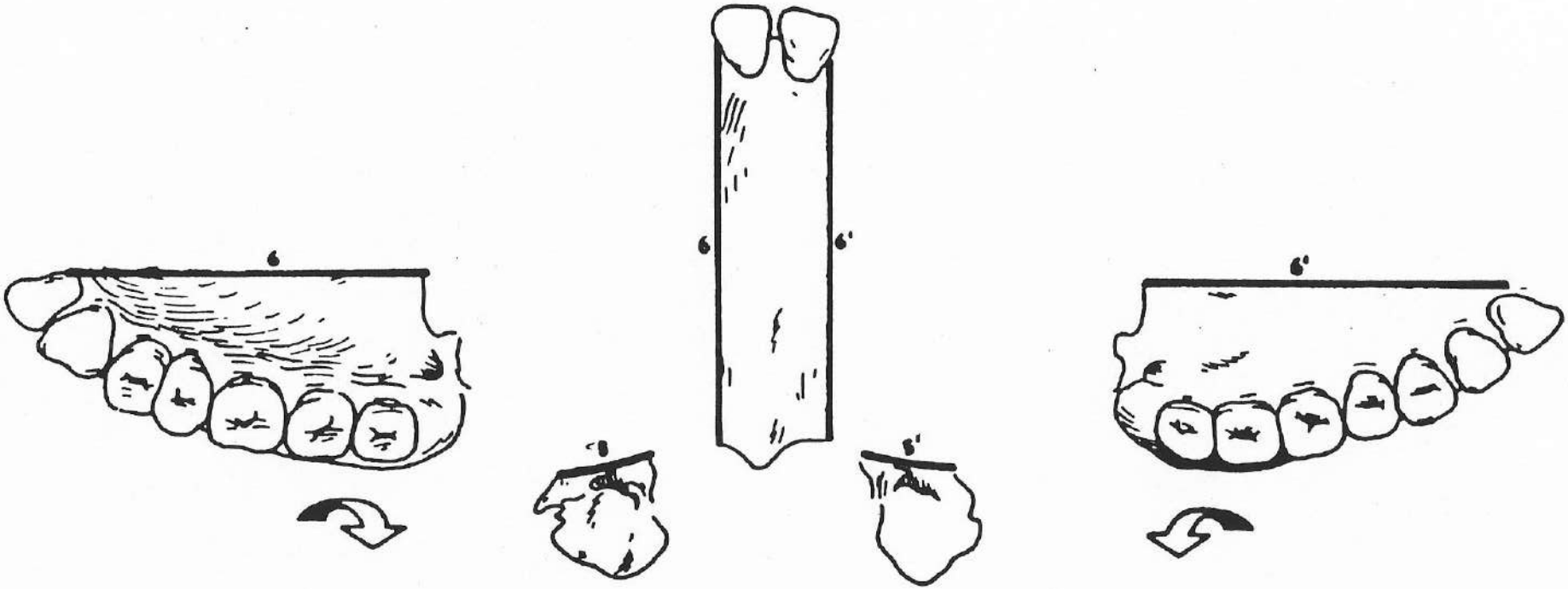

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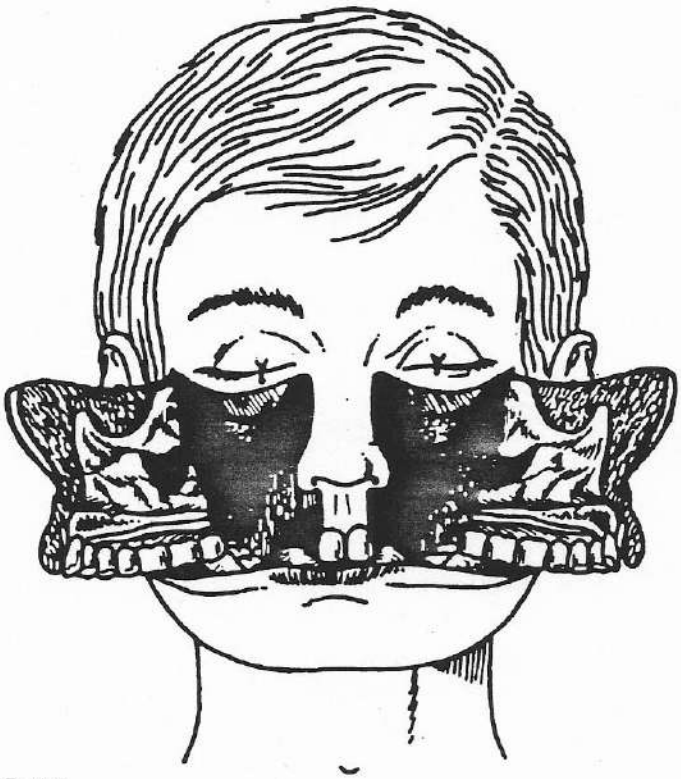

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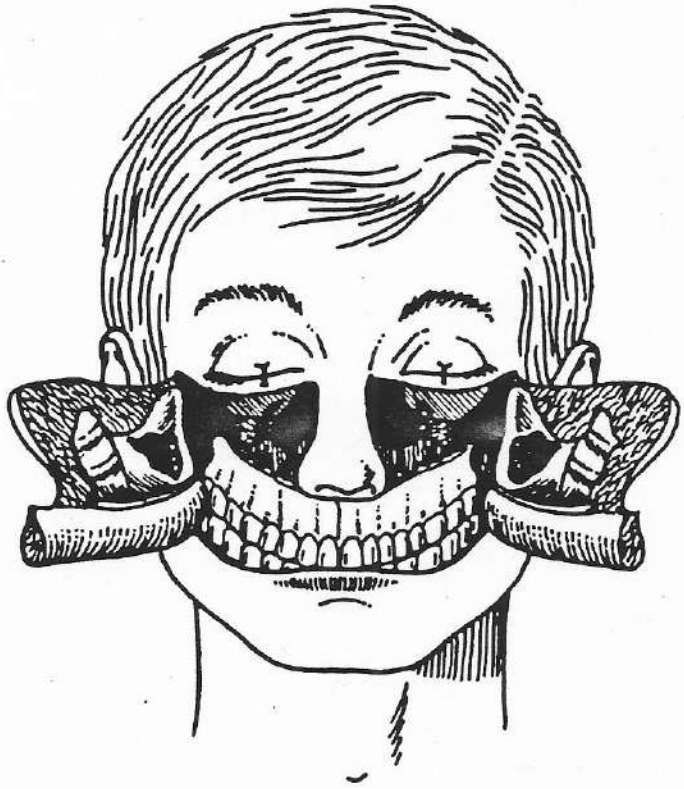

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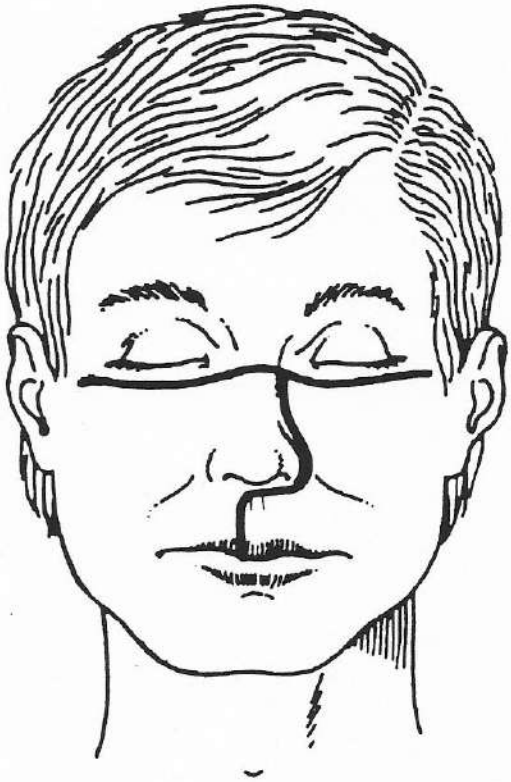

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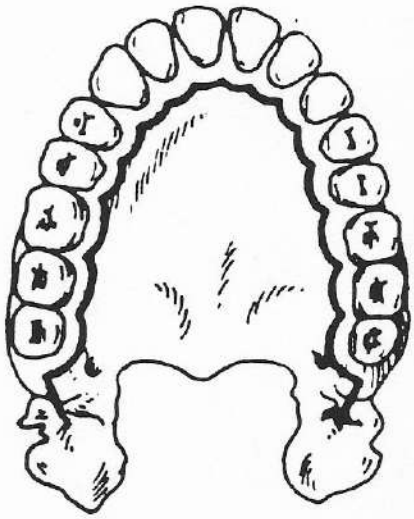

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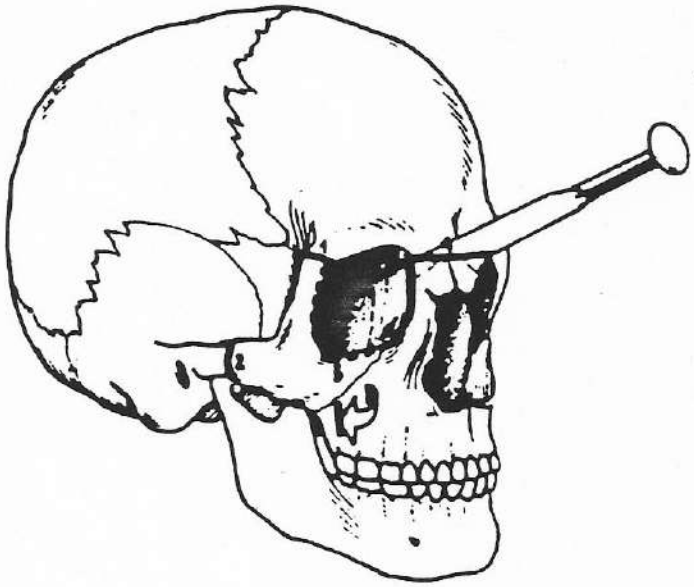

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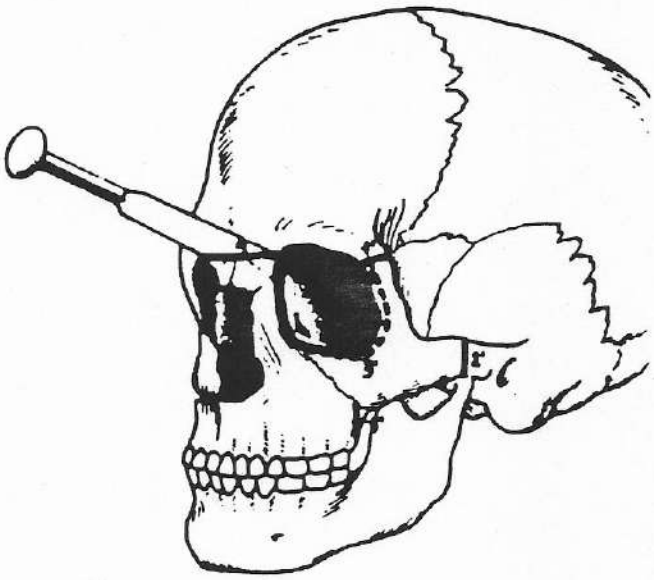

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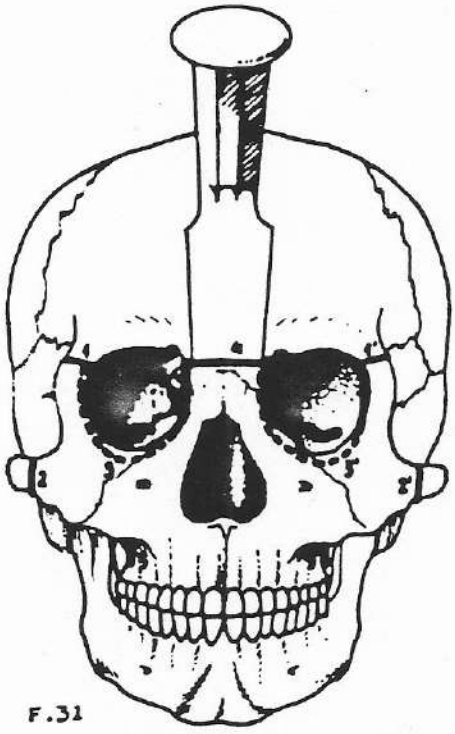

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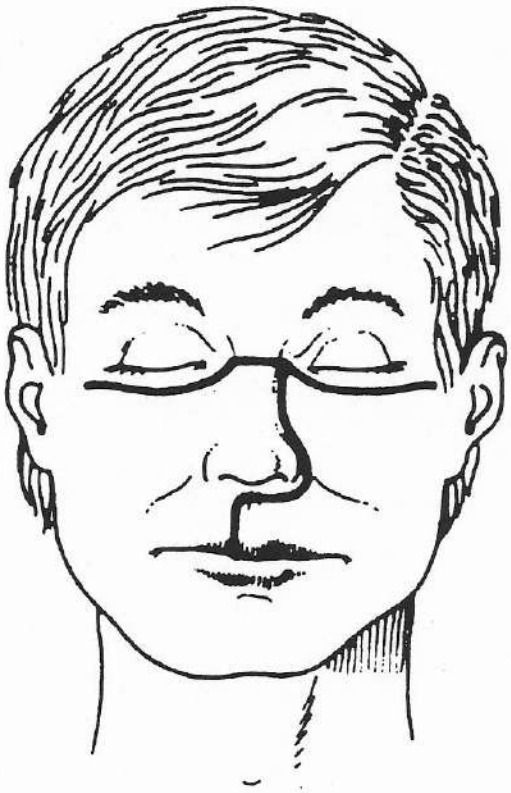

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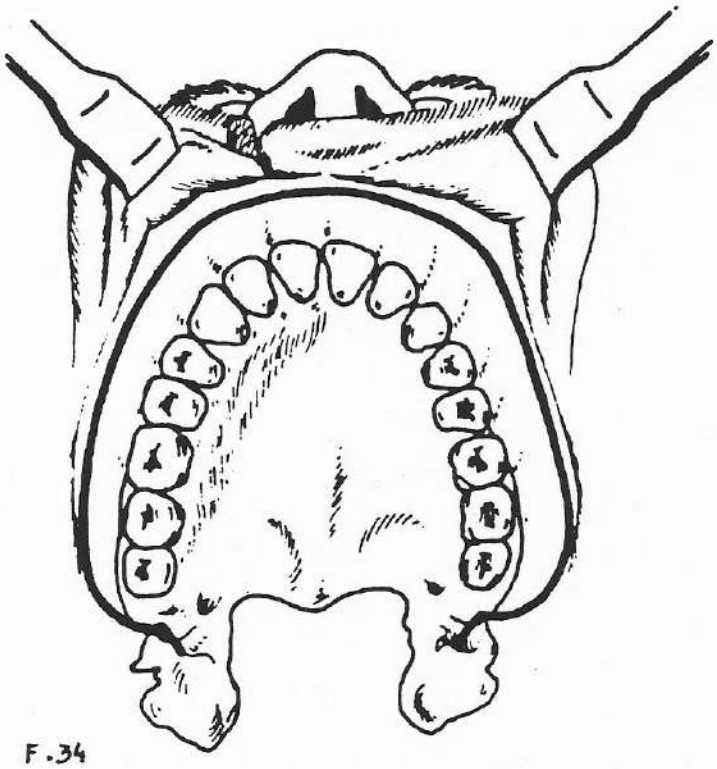

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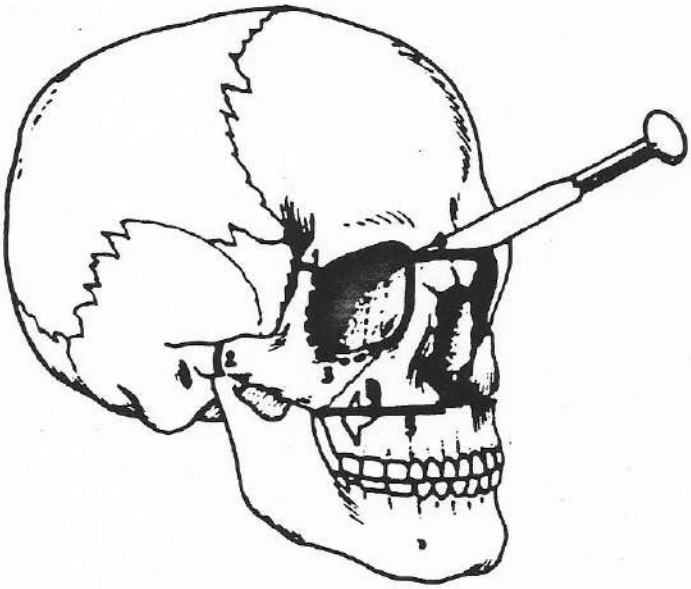

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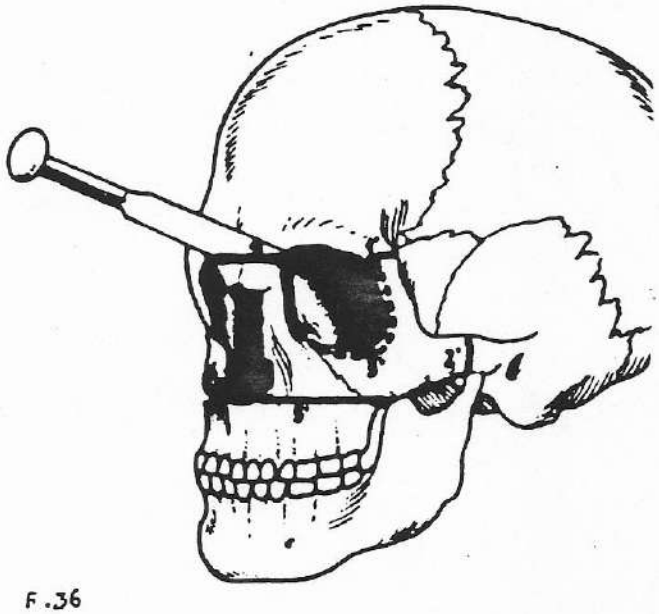

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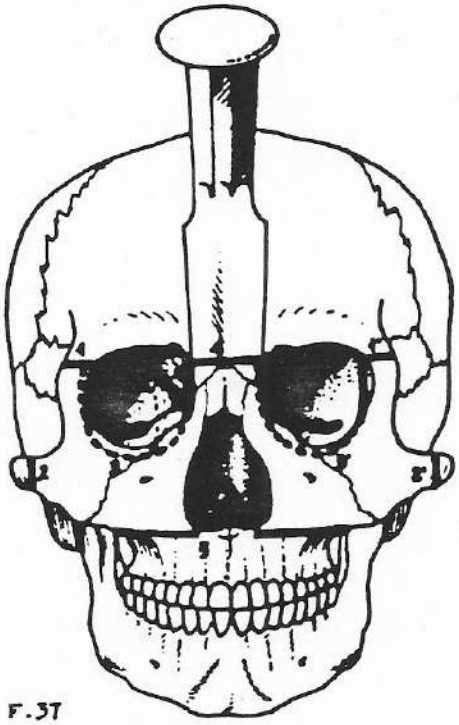

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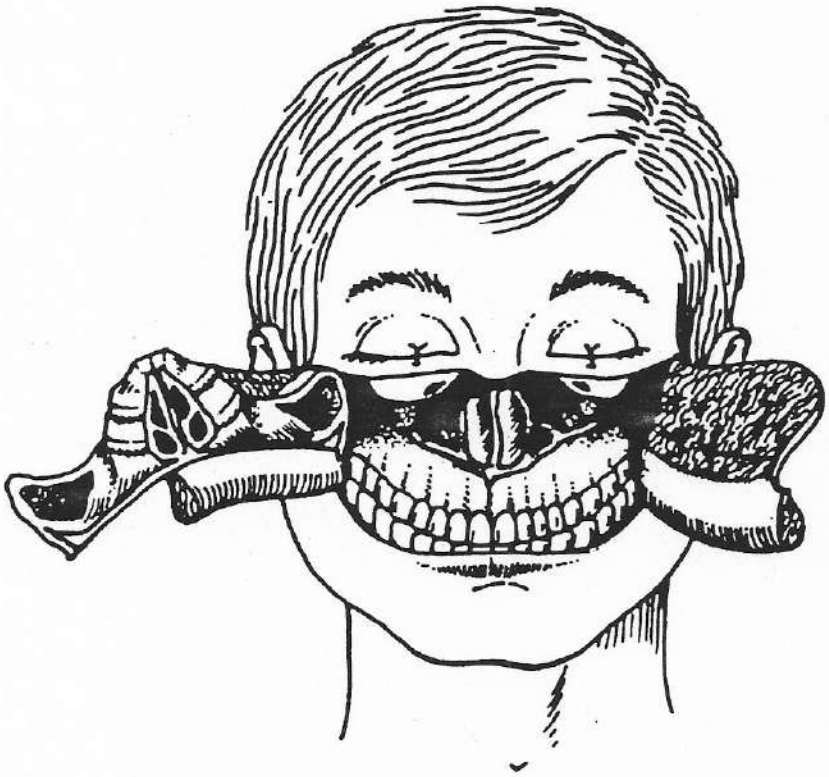

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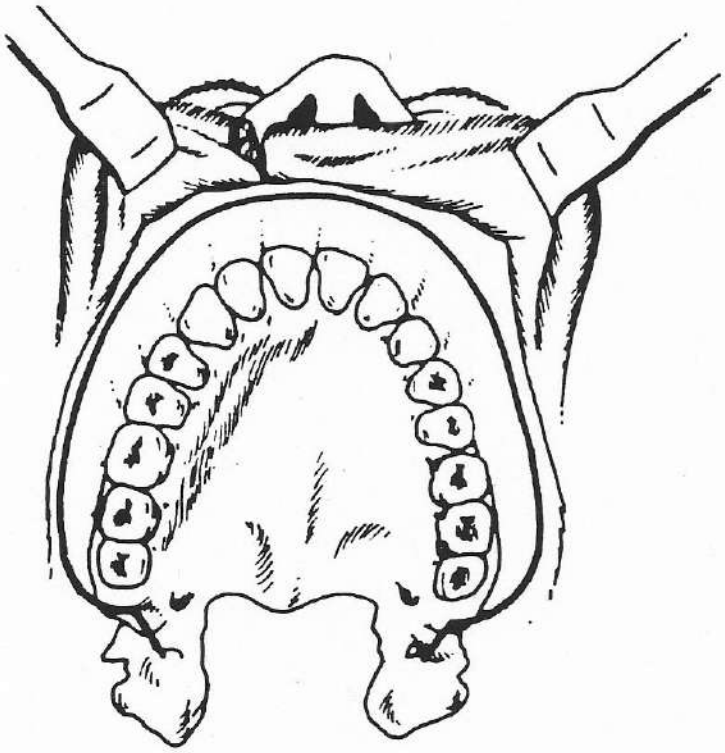

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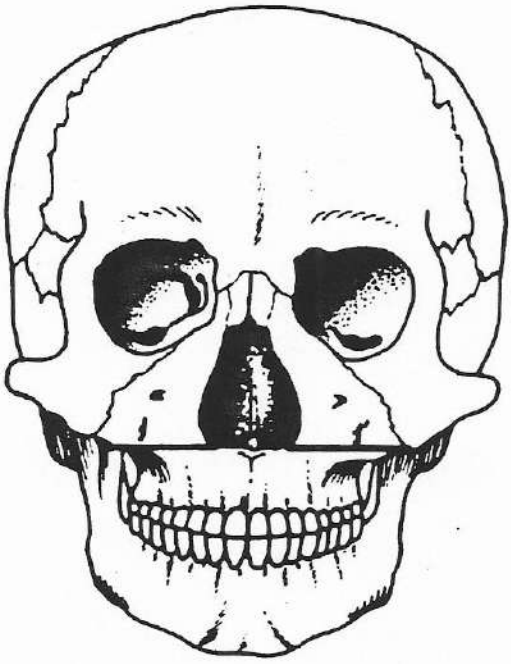

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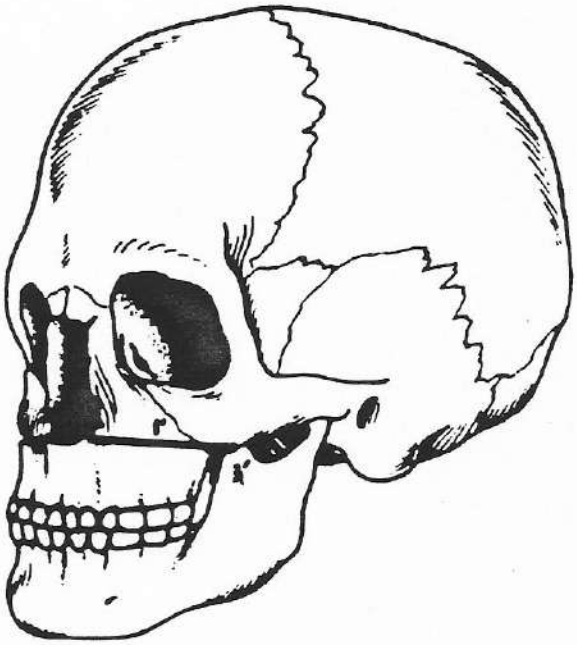

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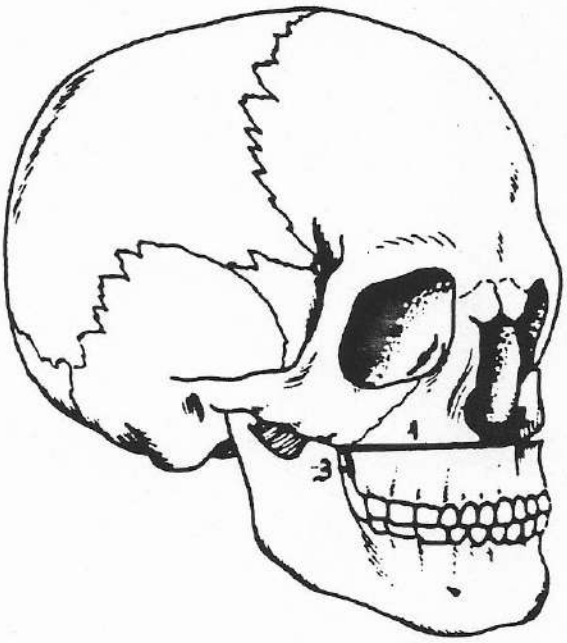


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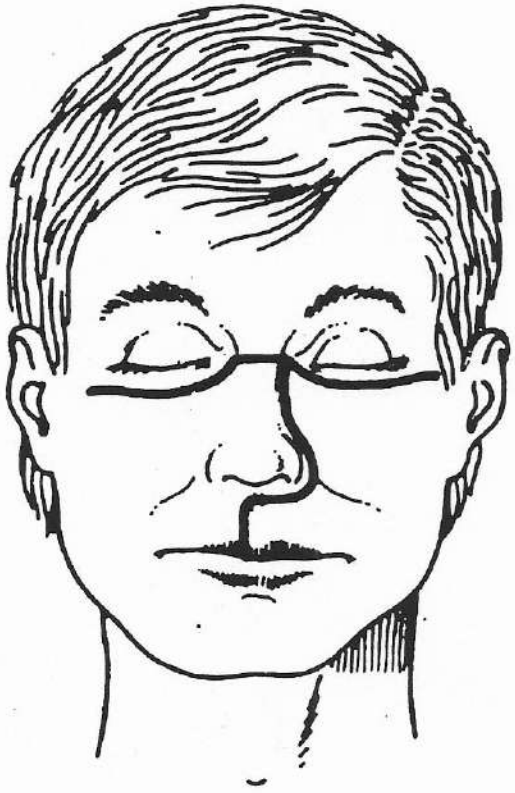

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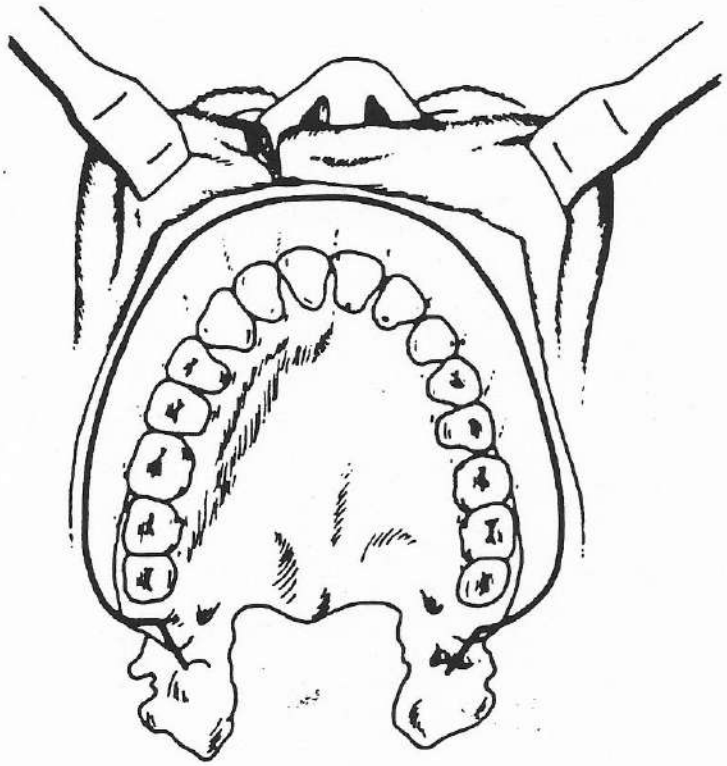

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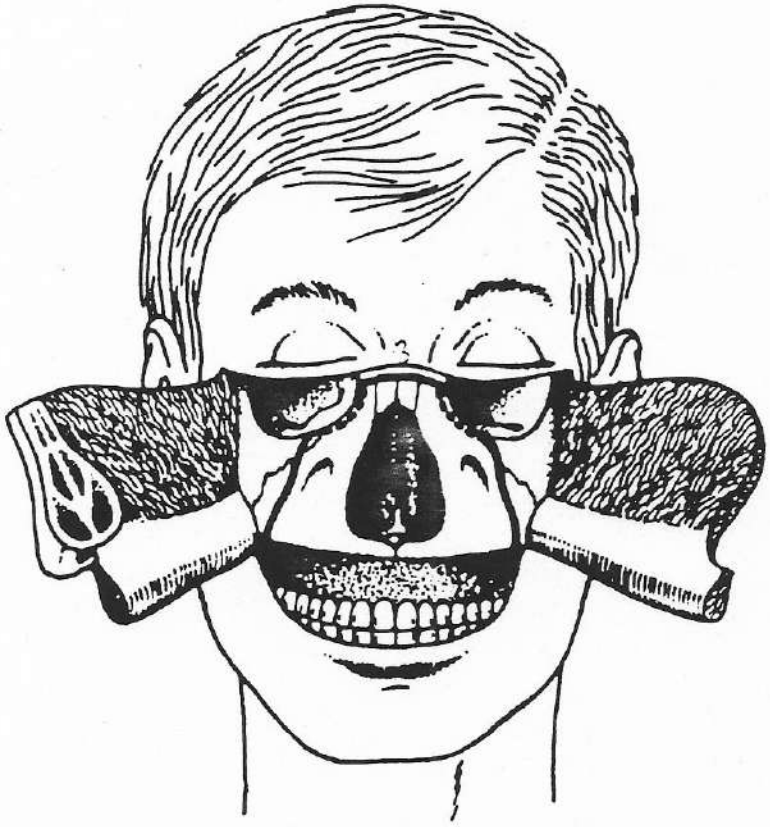

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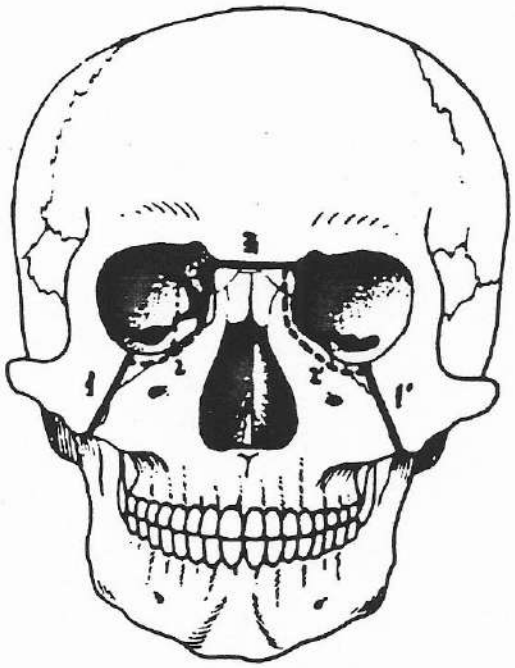

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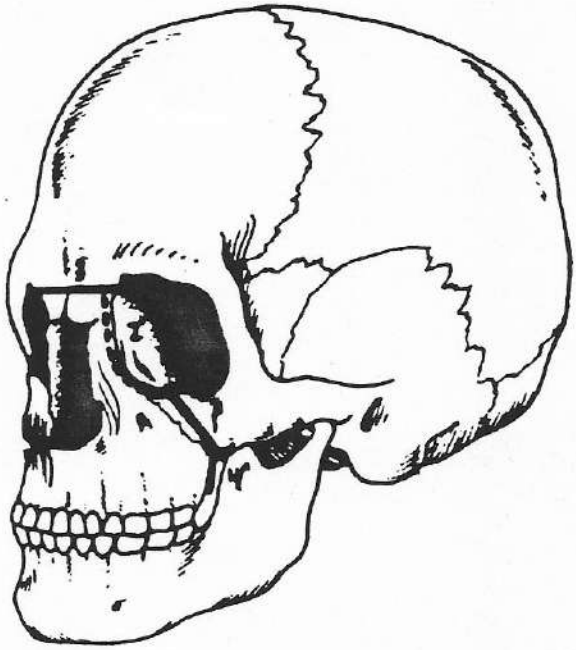

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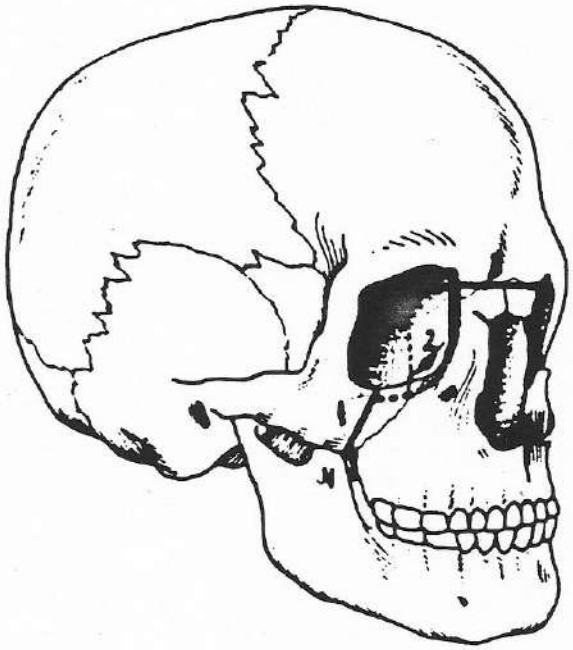

F.49

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F.51

Photograph of the fire enamel which represents the greater unilateral and bilateral techniques.