

Dr Eugene Ratner

**JAWBONE CAVITIES AND
TRIGEMINAL AND ATYPICAL
FACIAL NEURALGIAS**

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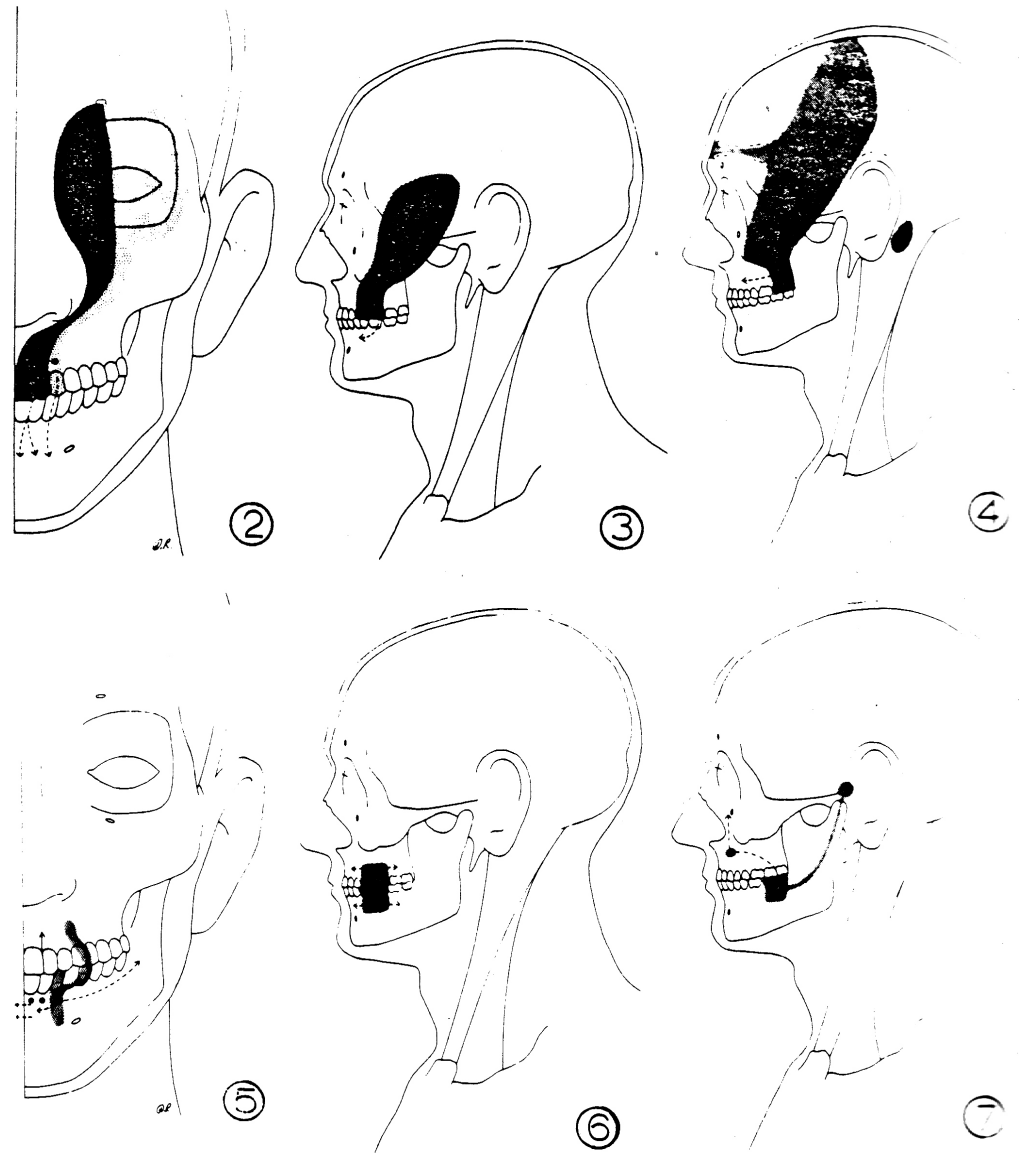
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Pain Distribution Patterns

from jaw bone
pathology

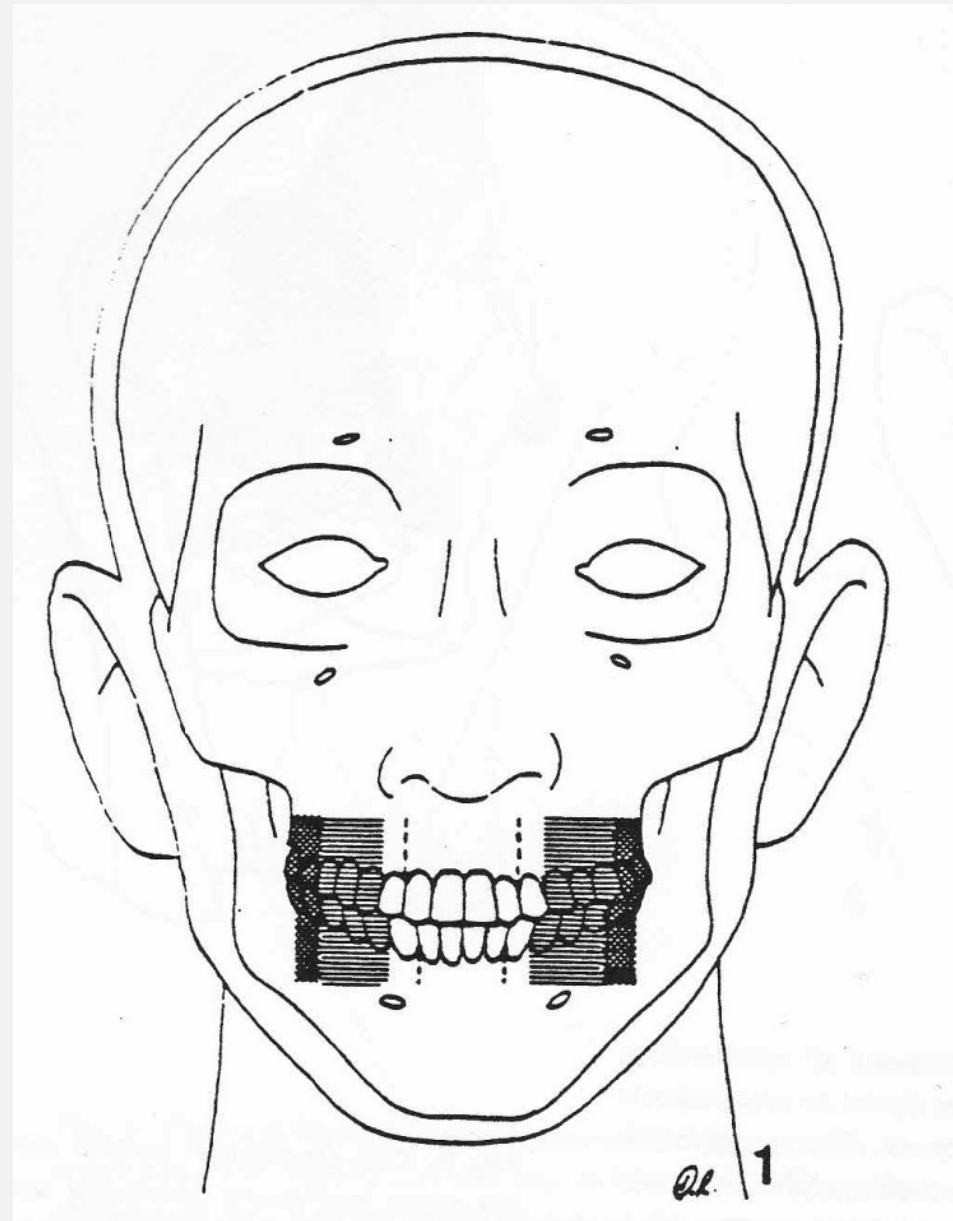
Anatomic Divisions

Division of the upper and lower jaw quadrants into discrete anatomic regions **for diagnostic purposes:**

Anterior region (*stippled area*) from the midline of the face to the distal surface of the canine tooth. The anterior region is further divided into two subregions (by *the vertical dotted line*) consisting of, respectively, the *incisor teeth* and the *canine tooth positions*.

Midregion (*horizontal lines*) from the distal surface of the canine to the distal surface of the first molar.

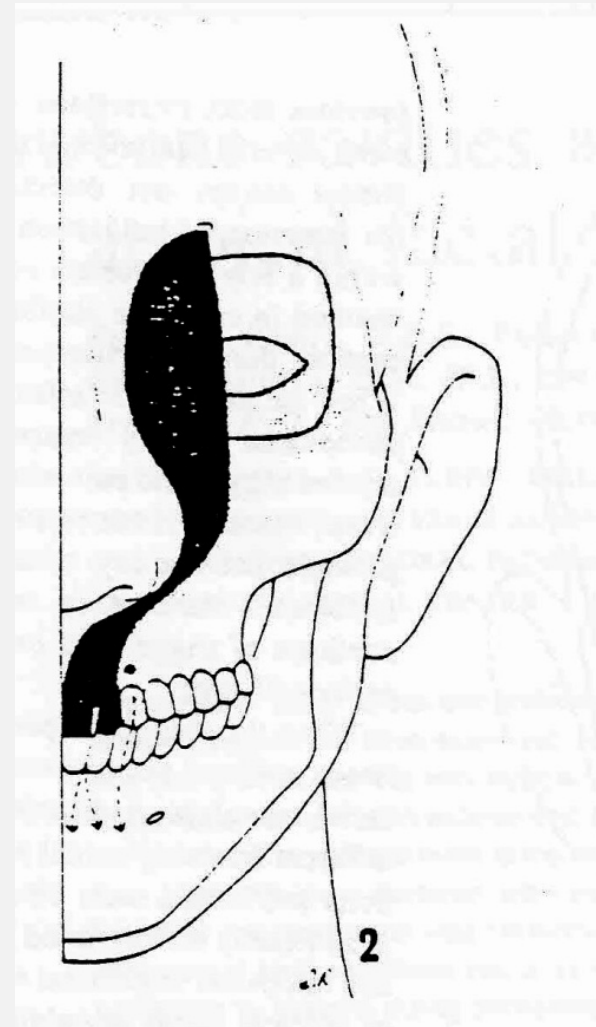
Posterior region (*cross hatch*) from the distal surface of the first molar to the ascending ramus of the mandible



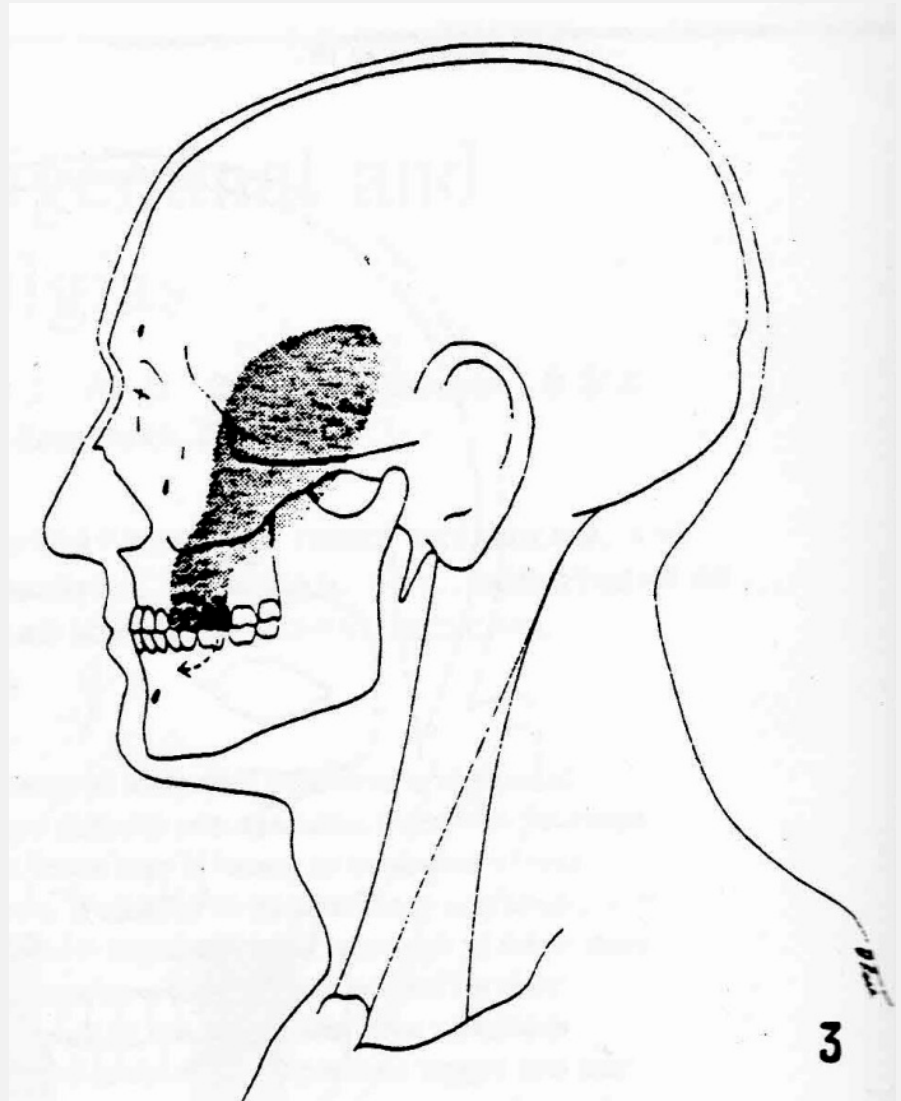
Figs. 2 to 7 following

- Diagrammatic representations of relationships between **sites of bone cavities** or other dental or oral pathosis and associated **pain-distribution patterns**.
- The small black dots indicate anatomic regions in which pathosis is found (that is. region of central incisor, lateral incisor. canine. etc.).
- The shaded areas show the major associated pain-distribution patterns. The dotted lines and arrows shown pain distributions of lesser intensity or frequency.

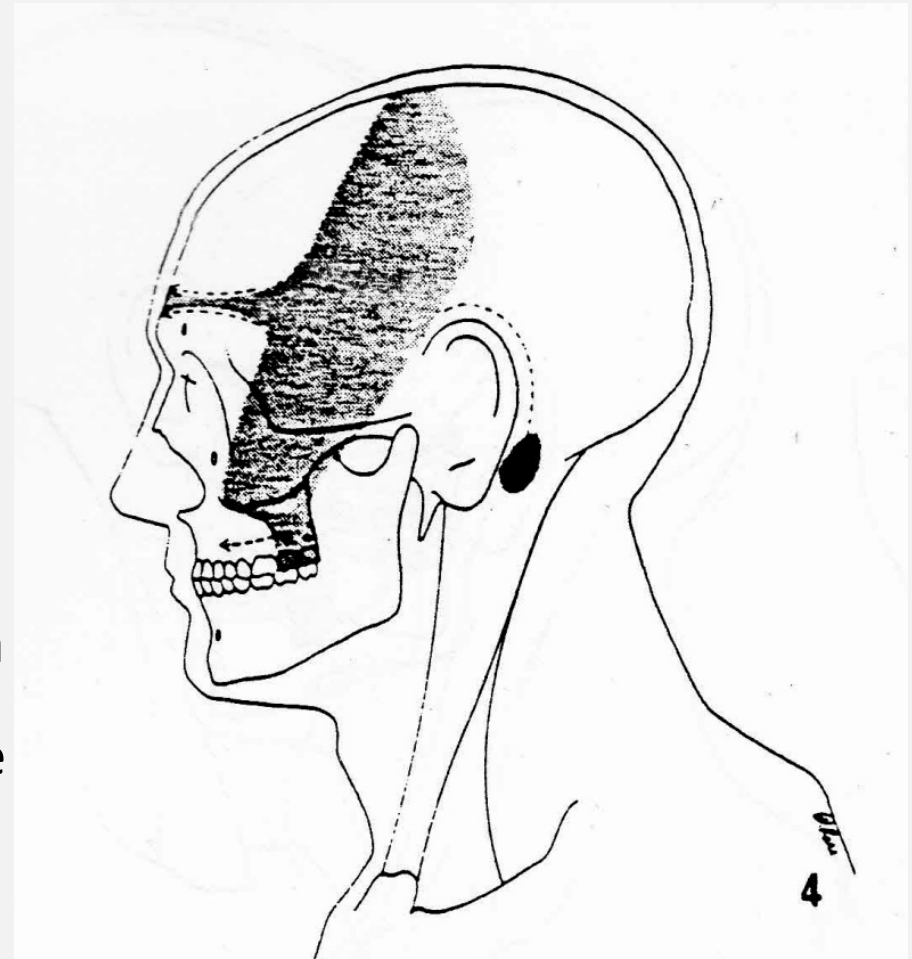
- **Fig. 2.** Pain distribution patterns associated with pathosis in *upper anterior regions*. For the *central and lateral incisors*, the pain-distribution path is vertically up to the infraorbital margin, thence directly up to the supraorbital margin, or indirectly via a path passing upward around the inner canthus of the eye. A sporadic component of lesser intensity may pass vertically down to the mandible. For the *canine region*, the pain-distribution path is vertically up to the infraorbital margin, and thence laterally, in a reversed "C"-shaped curve around the outer canthus of the *eye*, to the supraorbital margin. A sporadic component of lesser intensity may pass vertically down to the mandible.



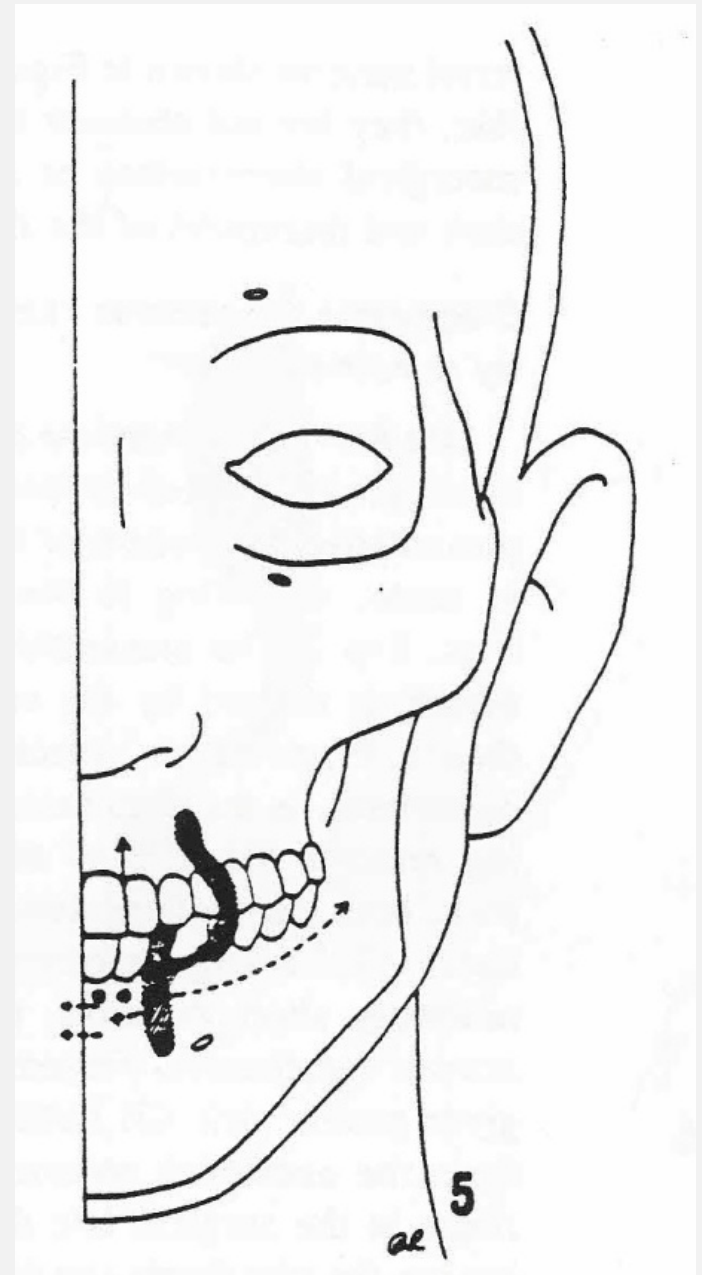
- Fig. 3.** Pain-distribution pattern associated with pathos's In the *upper midregions* (premolar and first molar teeth'. The pain-distribution path is predominantly up. with diffuse termination in the temporal region. A less frequent component may extend down from the premolar region in a reverse "C"-shaped path lateral to the corner of the mouth. to term. - nate the mandibular canine region.



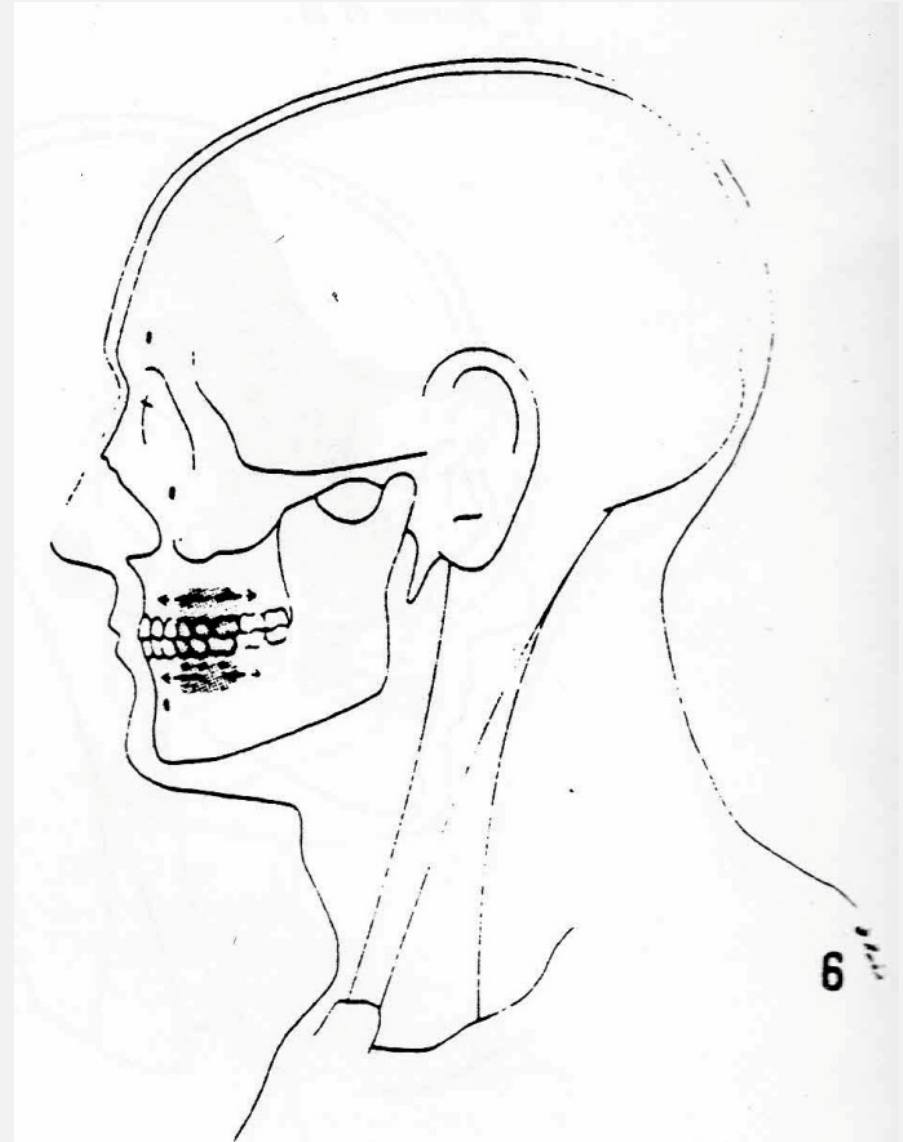
- **Fig. 4.** Pain-distribution pattern associated with pathosis in ***upper posterior regions (second and third molars)***. The pain distribution path is to the lateral surface of the zygoma. with a possibly, diffuse upward component to the temporal region. which may extend to the vertex of the skull. There may be a postauricular referral. curving up to the ear. There may also be a horizontal maxillary component. extending anteriorly to the canine region. and an anterior-inferior component to the anterior-lateral margin of the tongue.



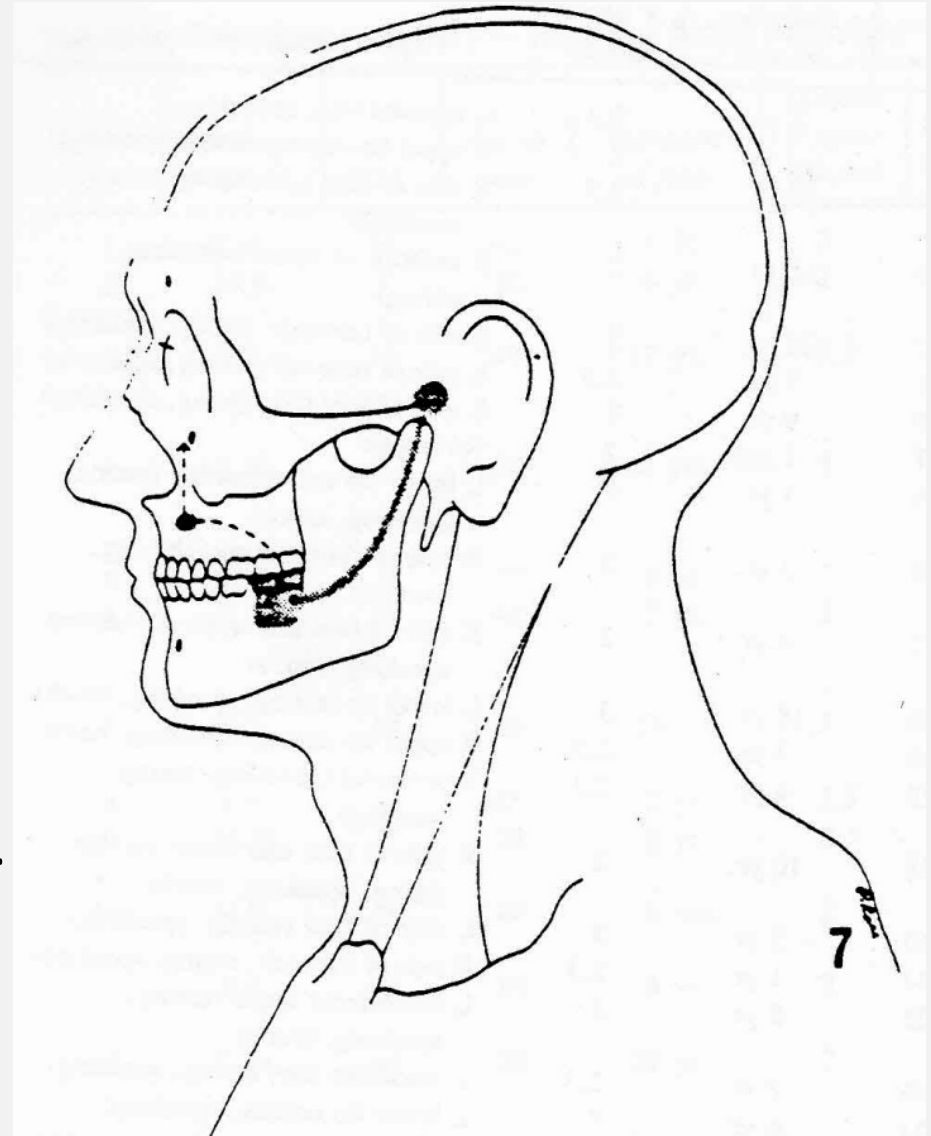
- **Fig. 5.** Pain-distribution pattern associated with pathosis in *loiter anterior regions*. For the *central and lateral incisors*, the pain-distribution path is vertically up to the opposing maxillary teeth, with possibly variable short horizontal referrals across the midline of the mandible. For the *canine region*, the path is vertically up and into a reversed "C-shaped curve lateral to the corner of the mouth, terminating in the maxillary canine and first premolar regions. Horizontal referral may be quite variable and may encompass the entire mandible, or it may be localized to the canine region.

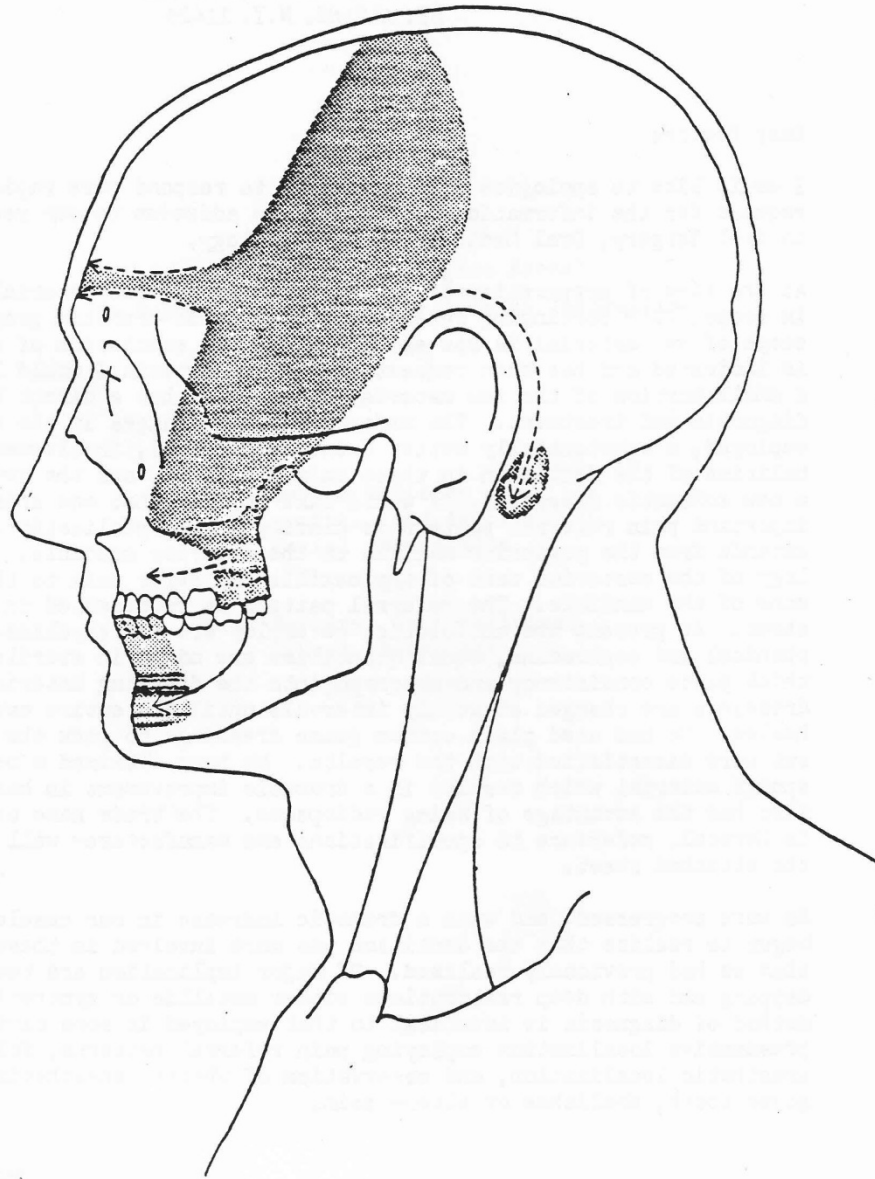


- Fig. 6.** Pain distribution associated with pathosis of *lower midregions*. For the area between the distal surface of the *Caine* and the anterior surface of *the first molar*, the associated paths are upward to the opposing arch, with a possible horizontal component which is variable in frequency of occurrence and extent. If the opposing arch is partially or completely edentulous in the region opposite the pathologic site the horizontal referral may encompass the anterior



- **Fig. 7.** Pain-distribution pattern associated with pathosis in *lower posterior regions*. The predominant referral is to the region of the temporomandibular joint. Rarely is pain referred to the opposing teeth. In several instances involving both dental and bone pathosis, there was extension of the referral path to the maxillary anterior region, including the ipsilateral orbital region.



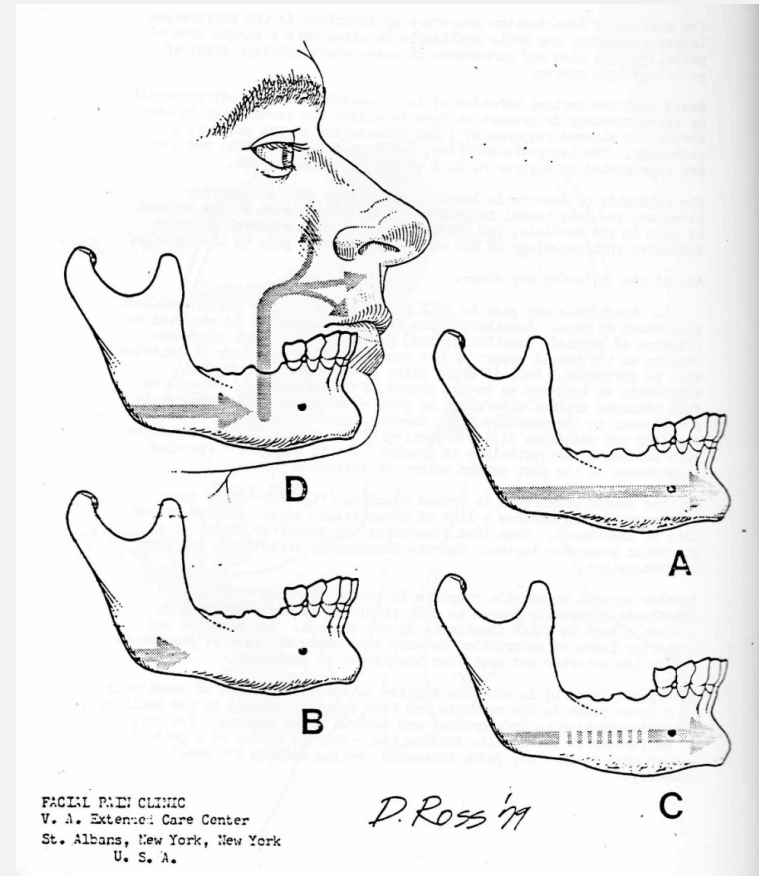


FACIAL PAIN CLINIC
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Anaesthetic bridging

Any of the following may occur:

- 1. Anesthesia may pass to full terminus i.e. to the midline without alteration of pain. Anesthetization of the lip must not be accepted as evidence of complete anesthetization, rather — sharp point cutaneous testing on the buccal aspect of the mandible, from posterior to anterior must be performed. Only if sharp point cannot be perceived, can anesthesia be regarded as having passed to full terminus. Passage to full terminus without alteration of pain — indicates that pathology is not present in the mandible. If, however, anesthesia passes to full terminus and abolishes all or a portion of the presenting pain syndrome, this indicates that pathology is present, but is relatively vascular, in contrast to the most common sclerotic avascular lesion.
- Another common occurrence is termed blocking (Fig. B). Sharp point cutaneous testing defines a line of demarcation between anesthesia and lack of anesthesia. This line demarcates the posterior border of a sclerotic avascular lesion. Operate immediately anterior to the line of demarcation.
- Another variant anesthetic response is teamed bridging (Fig. C). Anesthesia apparently passes to full terminus. Sharp point testing defines a zone in which anesthesia is not present. The anterior and posterior lines of demarcation between anesthesia and lack of anesthesia define the anterior and posterior boundaries of pathology.
- Divergence (Fig. D) is the term applied to anterior passage of anesthesia to a given point in the mandible and then vertical passage to the maxilla, with distribution to infraorbital and lateral nasal regions. The site of deflection to the maxilla defines the posterior border of a pathologic lesion once again sharp point cutaneous testing defines the exact boundary



Remote Symptom Referral from Maxilla

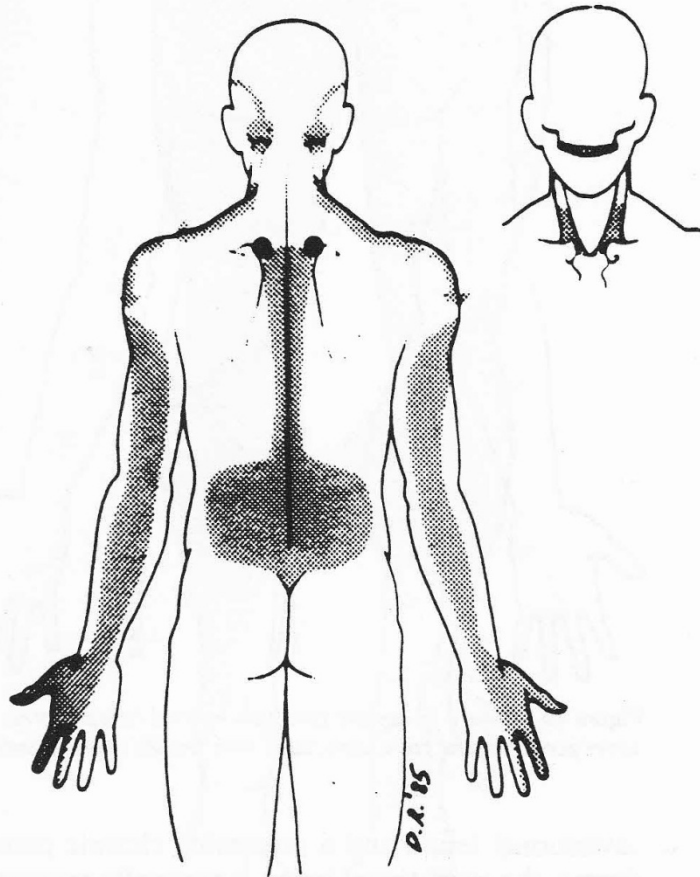


Figure 8. Pattern of remote symptom referral (shaded area) in the upper portion of the body, associated with lesions of the maxilla.

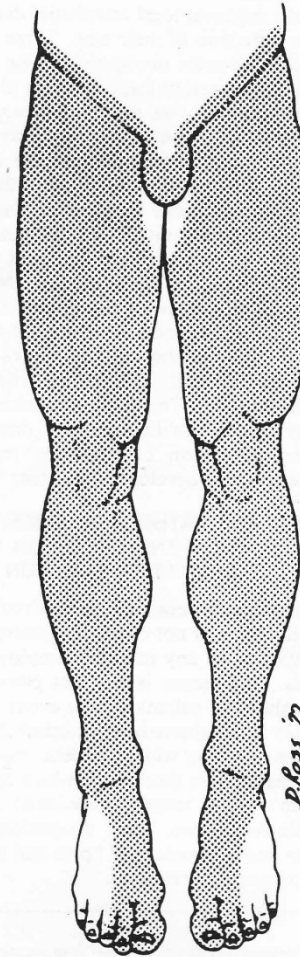
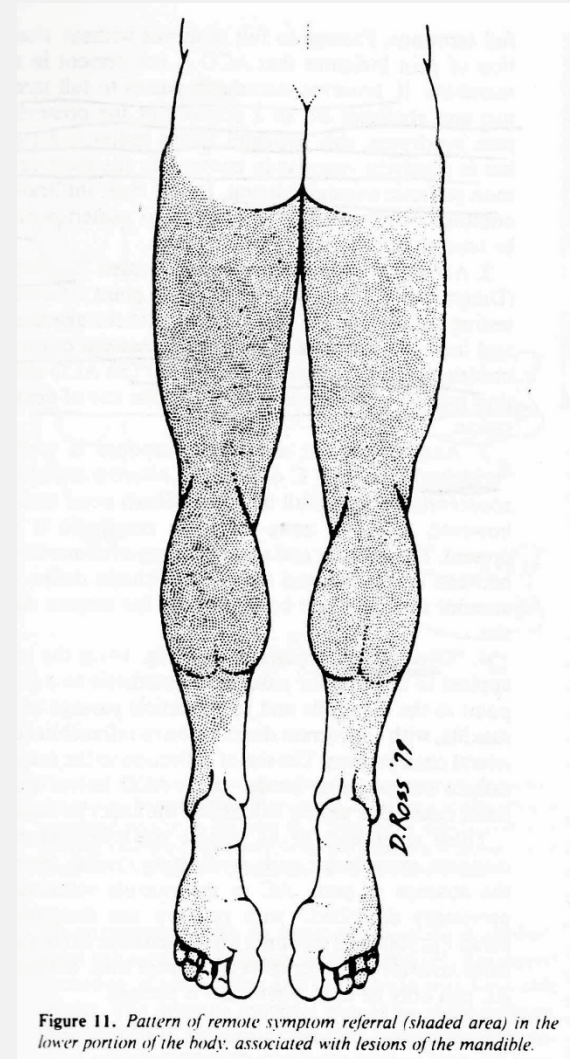
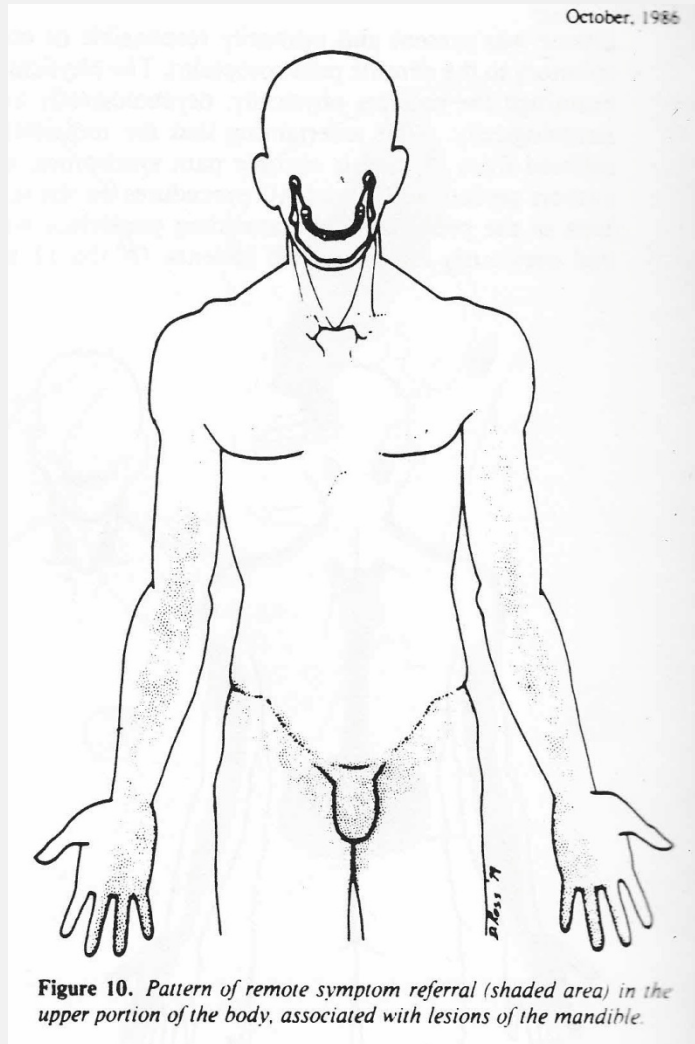


Figure 9. Pattern of remote symptom referral (shaded area) in the lower portion of the body, associated with lesions of the maxilla.

Remote Symptom Referral from Mandible



*I.B. Bender, D.D.S., and Samuel Seltzer, D.D.S.,
Philadelphia JADA Vol 62 June 1961*

To simulate periodontal and periapical lesions, bone cuts were made in mandibles from human cadavers, and the roentgenographic and visual appearances of the bone were compared. It is evident that inflammatory or tumorous lesions cannot be visualized if they are confined within the cancellous bone. However, if the lesions erode the junction area of the cortex and cancellous bone or perforate the cortex, they can be distinguished roentgenographically. **Early stages of bone disease cannot be detected by means of routine roentgenograms, nor can the size of a rarefied area on the roentgenogram be correlated with the amount of tissue destruction**

THE INFLUENCE OF PATHOLOGICAL BONE CAVITY OF JAW BONE ON THE ETIOPATHOLOGY OF TRIGEMINAL NEURALGIA

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Department of Oro-Maxille Facial Surgery

Sechuan Medical College

- In this article, 37 cases of "Primary Trigeminal Neuralgia" are reported.
- It is found that in all the cases, pathological bone cavity is found either in the upper or lower bone, which is revealed through histopathological examination to be caused by chronical inflammation.
- After the pathological bone cavity is removed through surgery, in the half-a-year follow-up, it is found 89.19% of the cases have got the cure effect of Grade I, which means that all the pain disappears, 10.81% of the cases have got the cure effect of Grade II and no case has been found in which there has been no effect at all. The pathological influence of pathological bone cavity of jaw bone on trigeminal neuralgia is also discussed.