

THE SKULL AND BRAIN

ROENTGENOLOGICALLY CONSIDERED

By

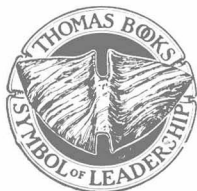
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Foreword

THIS VOLUME was compiled for the sole purpose of producing a source of ready reference for those who may be called upon to examine roentgenograms of the skull. We fully realize that this work is not exhaustive and no attempt was made to make it so. We have merely gathered together illustrations of the conditions which we have found to occur most frequently, and have added a few examples of the rare types of pathology with which the more common might be confused.

It is quite possible that we may be criticized for using only outstanding typical examples rather than including some borderline cases to illustrate differential diagnoses. It is true that the indefinite case may often teach a lesson, but if we had attempted to show and discuss early and atypical types of each condition, the number of illustrations would have been so great as to preclude the possibility of including them all in one volume. We feel that a clear understanding of the typical case will usually permit one to make a diagnosis of one presenting less typical changes, for as a rule a careful study of the atypical case will reveal one or more of the characteristic changes described and illustrated in this book.

We wish to take this opportunity to thank Dr. Ross Golden, Dr. John Caffey and Dr. Ernest H. Wood for their valuable aid; also Mrs. Dorothy C. McEntire and Miss Celeste McCallen for their careful typing and helpful suggestions.

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Chapter I

Technique

IN ORDER to make a proper roentgenographic study of the skull, it is advisable to follow a certain routine, which necessarily will have to be altered at times to fit special cases. The positions which we have found to be of greatest value in making such a study are the anterior posterior, the posterior anterior and the lateral views, and preferably all of these positions should be taken stereoscopically with the aid of the Potter-Bucky diaphragm.

Any radiographic technique should have as its objective the production of a film showing the greatest possible detail in the cranial and intracranial structures. In a good film of the skull it is possible to see clearly the sutures, the vascular channels and the bone trabeculae; in addition it must be mentioned that if a film does not show these structures, neither will it show early evidences of intracranial pathology. We have found the following roentgen technique to be quite satisfactory for routine examinations: a kilo-voltage of 75 with a milliamperage of about 20 and a target film distance of approximately 30 inches, using a fine focus tube. The time factor will vary with the speed of the intensifying screens, the size of the head and with the type of Potter-Bucky diaphragm used.

A. ROUTINE POSITIONS

1. The antero-posterior view is obtained by placing the occiput next to the film. The central x-ray beam is directed so that it passes through the forehead at the root of the nose (nasion) and emerges at the external occipital protuberance (inion). A single view in this position usually suffices.

2. In the postero-anterior view (Figure 5), the above described position is reversed — that is, the forehead is placed on the film and the central beam is directed through the external occipital protuberance so as to emerge at the nasion.

3. The lateral view (Figure 4) is made with the head placed in as true a lateral position as possible. This may be accomplished by placing the head so that a line passing through the nasion and external occipital protuberance will be parallel to the film. The lateral views, at least, should be made stereoscopically, for in this way only can the full value of the shadows be realized. The central beam of the first exposure should pass through the center of the sella turcica. The second exposure is made after the tube has been shifted cephalad $2\frac{1}{2}$ inches. In this way one obtains a view into the sella turcica and can usually note the difference, if any, between the clinoid processes of the two sides.

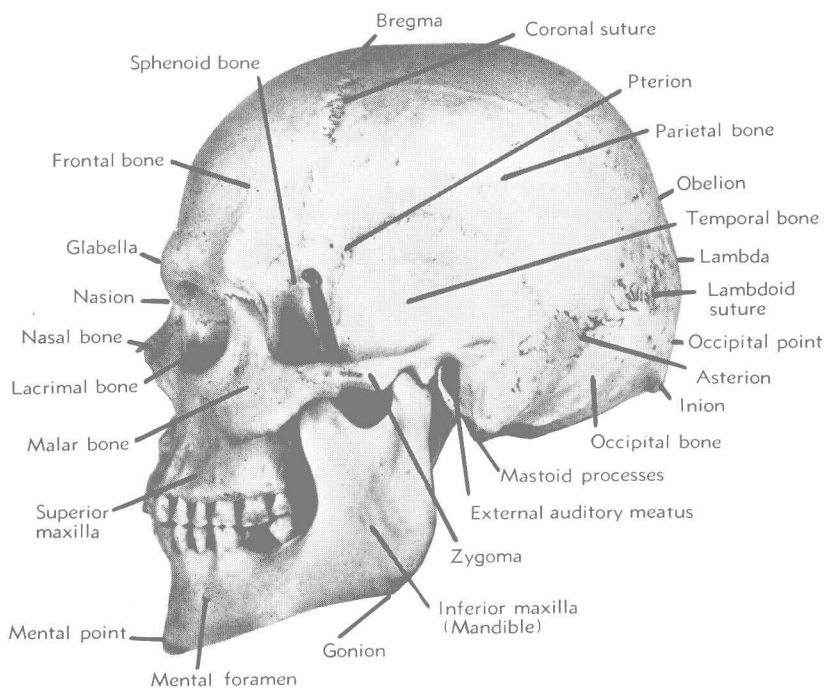


Figure 1. Lateral view of the skull.

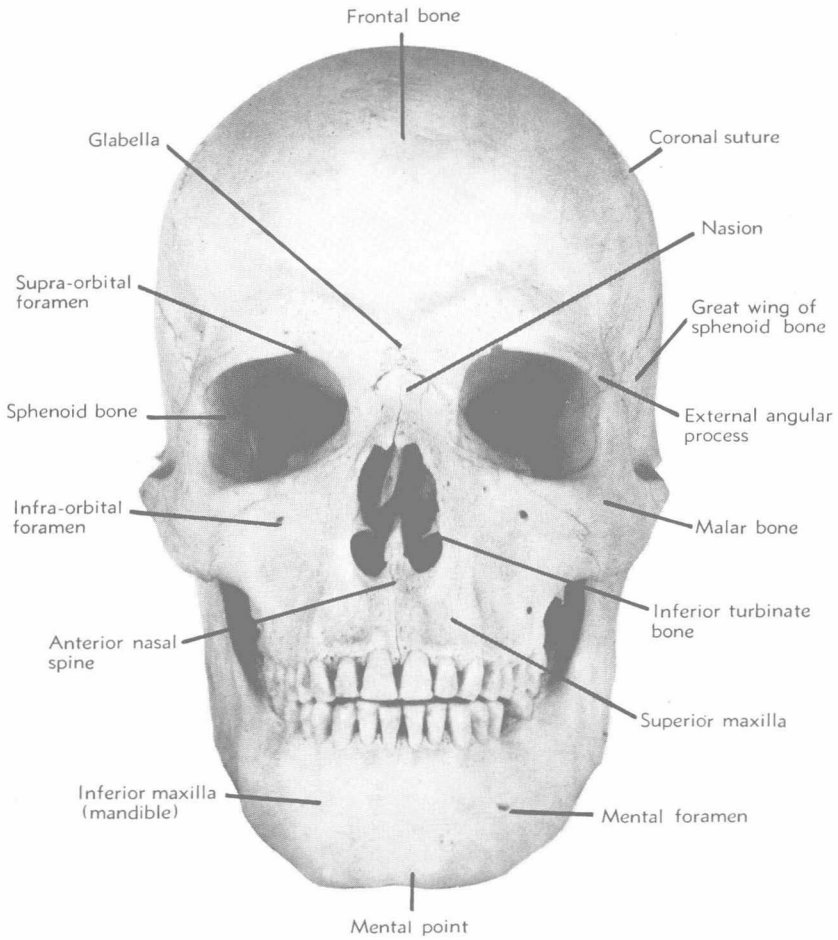


Figure 2. Anterior view of the skull.

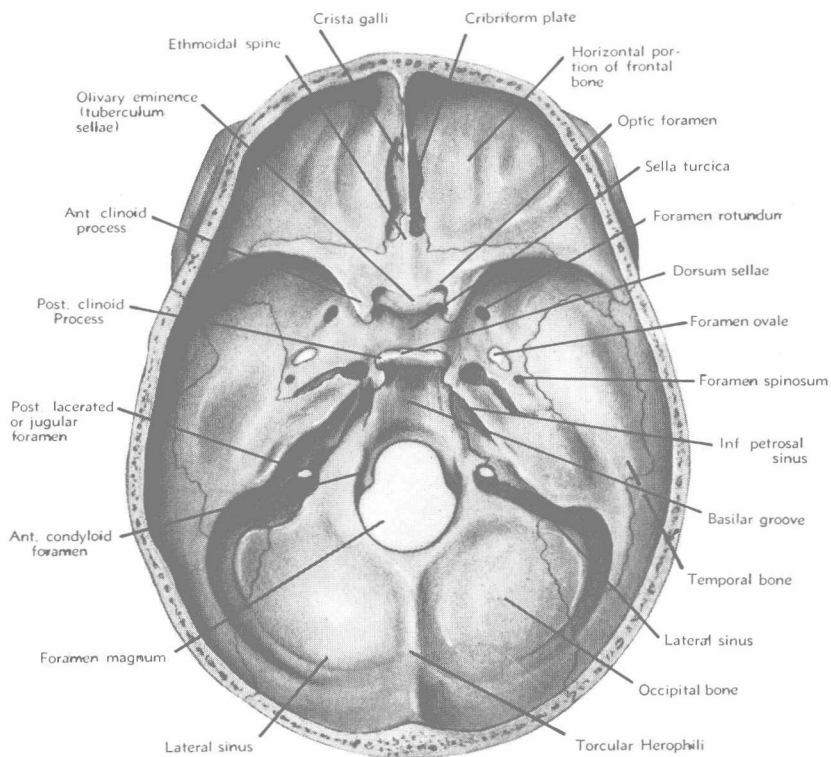
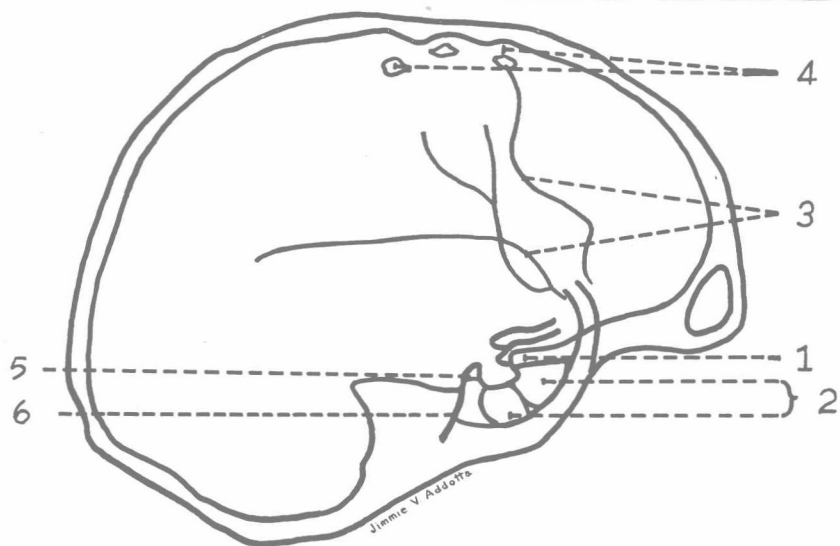
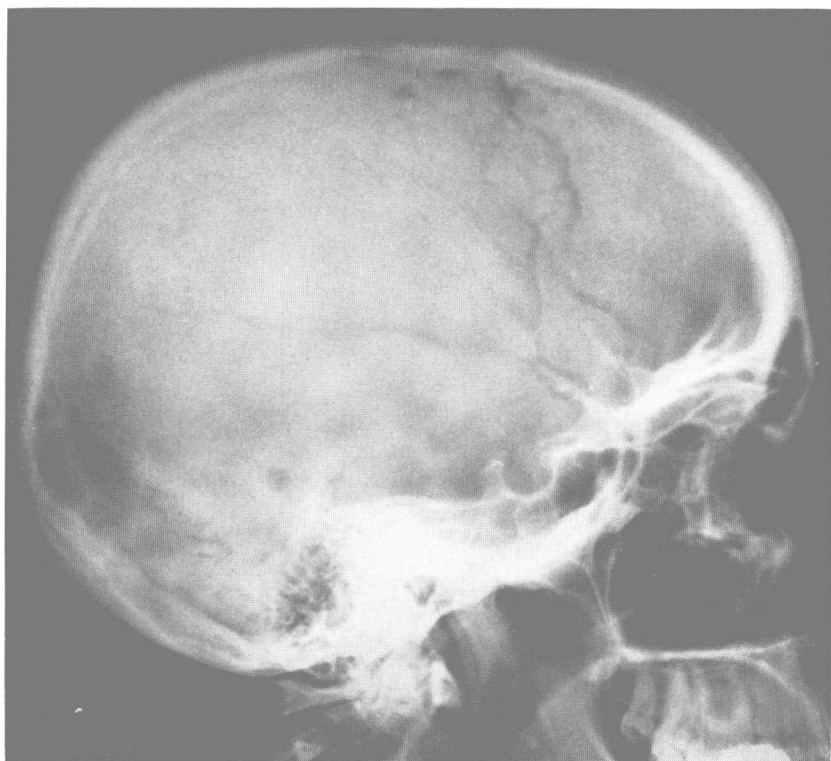


Figure 3. Base of skull from above.

Figure 4. Normal skull.

1. Tuberculum sellae
2. Sphenoid sinus
3. Meningeal channels
4. Pacchionian impressions
5. Dorsum sellae
6. Clivus



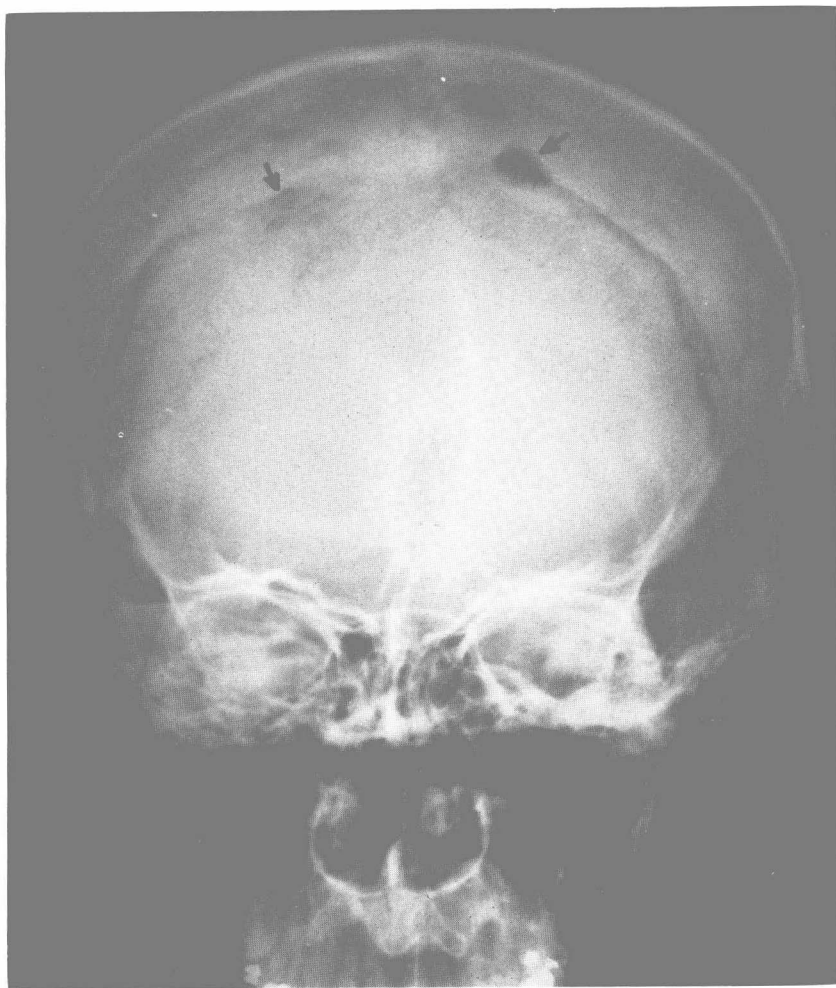


Figure 5. Same case as Figure 4. Arrows indicate the deep parietal impressions with adjoining vessel channels.

Figure 6. Normal skull of child, age 9 years.

1. Spheno-occipital suture
2. Coronal suture
3. Lambdoid suture
4. Internal occipital protuberance
5. Olfactory plate

