SKIAGRAPHS OF THE MASTOID IN CERTAIN
ATYPICAL CASES.*

BY HAROLD HAYS, M. D.,

NEW YORK.

The X-ray pictures that I am going to present are of four different cases of mastoiditis in which the X-ray proved of a great deal of value. In the majority of cases I do not believe that it is necessary to have an X-ray picture taken in order to make a diagnosis, but there are certain borderline cases where one is in doubt as to whether the mastoid is sufficiently involved to warrant operation. In the first three pictures I am presenting, the radiographic findings were such that, taken in connection with the clinical symptoms, a positive decision could be made as to immediate operation.

Case 1.—This patient, a male, fifty years of age, had had an acute otitis media with tenderness over the mastoid antrum for some days. The tenderness finally disappeared. There was no pain, no temperature, but a slight amount of parietal headache. At the end of seven weeks an X-ray picture was taken in order to corroborate the clinical findings of mastoiditis evidenced by profuse, prolonged discharge, with a sagging posterosuperior wall.

The X-ray pictures of the right and left mastoid are here presented. One can see very definitely the difference between the two sides. On the left side (normal) the mastoid cells show up clearly and distinctly, while on the right side the entire region is clouded and the interstices between the cells are poorly defined. This cloudiness extends well beyond the sinus, which can be readily seen as a line running downward and forward between the light and deep shadows.

Operation was performed the following day. A very large mastoid was found, which was entirely destroyed. In order

*Read before the New York Academy of Medicine, Section on Otology, April 9, 1915.

to remove all the cells, a T-incision was necessary. A complete exenteration was done. The wound was closed down to the lower half inch, into which was inserted a narrow strip of iodoform gauze, placed well into the antrum. The patient left the hospital on the seventh day, and on the fourteenth day the wound was completely healed.

Case 2.—Male, age twenty, developed an acute otitis media in the right ear, due to a pneumococcus. This subsided very nicely under local treatment after four days, but at the end of that time a reinfection took place, the responsible organism being the streptococcus mucosus. There was considerable pain radiating from the mastoid up over the parietal bone. There was a slight amount of discharge from the ear, with moderate sagging of the posterosuperior wall. Numerous incisions had been made with no definite effect. An X-ray picture was taken on the second day after this latter infection. This showed the mastoid to be distinctly cloudy on the right side. Two days later a mastoidectomy was done. It was necessary to operate for a sinus infection. The patient subsequently recovered.

The X-ray in this case showed very definitely that there was considerable involvement of the mastoid cells, although the interstices between the cells had not broken down. Comparison of the two photographs (Figure II) shows very distinctly that there is cloudiness on the right side. The outline of the sinus is very clear. The X-ray picture in this case not only definitely decided the diagnosis, but was of great help in showing the size of the mastoid and the location of the sinus.

Case 3.—A boy, age six years, developed an acute otitis media on both sides, due to a staphylococcus infection. Both ears discharged intermittently over a period of six weeks, during which time the child had no temperature, no pain, and no tenderness over the mastoids. The character of the discharge changed, the culture then showing an attenuated streptococcus. I advised having the child's tonsils and adenoids removed. At the time of this operation there was a slight sagging of the posterosuperior wall on the left side. After the removal of the tonsils and adenoids the temperature rose to 104°, but during the next four days gradually dropped to normal. However, the child seemed listless and would not eat. An X-ray picture was taken which showed a diffuse cloudi-

ness over the mastoids, and after consultation with Dr. Whiting and Dr. Lewis it was decided that it would be better to open both mastoids if the child did not seem to improve within the following day or so.

Two days later a mastoidectomy was performed on the left side—the side where there had been some sagging of the drum. The X-ray of this side showed far more cloudiness than the other side. The cortex was very thick for a child of that age, and it was not until I reached the antral region that mucopus was found. This extended down towards the tip and over the sinus plate, reaching up into the superior petrosal recess. After cleaning out the cavity the wound was closed by primary suture.

As there was so much destruction on the left side, I decided it wise to open the right side, where I found a similar condition. The patient recovered within the course of the next two weeks.

In this instance we had a subacute mastoiditis in which there was no evidence of any mastoid involvement, such as pain, tenderness, or temperature, yet the X-ray showed definitely that both mastoids were diseased.

Case 4.—Male, age twenty years, developed an acute otitis media on the right side with high temperature, severe pain, and extreme tenderness. A paracentesis was performed on two occasions with very little subsidence of the symptoms. On the fourth day I determined that if the symptoms were no better within twenty-four hours it would be necessary to open the mastoid. An X-ray picture was taken, which showed a very slight cloudiness on this side in comparison with the other, but not sufficient to indicate operative interference. It was decided as a result of this to defer the operation, and on the following day the symptoms were less severe and the temperature lower. Within the following week all symptoms disappeared and the patient was discharged cured.

I feel very sure that in this last case if the X-ray had not shown so slight an involvement in comparison with the symptoms, that an operation would have been performed. In this instance the value of the X-ray examination can hardly be doubted.

In determining the value of X-ray pictures one must only consider them in conjunction with the clinical symptoms. Dr.

Dixon, who took these pictures for me, is an expert in this line, and his X-ray work of the mastoid cannot be commended too highly. Each one of the four cases illustrated, showing both mastoids, is an excellent example of what can be done in this line. His experience, extending over the past few years, leaves no doubt as to the great value of X-ray examination of the mastoid in those cases in which the clinical findings are obscure, or in those cases where one wishes to indorse his conviction that operative interference is necessary.

FIGURE 1.
Case 1.—Right mastoid.

FIGURE 2.
Case 1.—Left mastoid.

FIGURE 3.
Case 2.—Right mastoid.

FIGURE 4.
Case 2.—Left mastoid.

FIGURE 5.
Case 3 —Right mastoid.

FIGURE 6.
Case 3.—Left mastoid.

FIGURE 7.
Case 4.—Right mastoid.

FIGURE 8.

Case 4.—Left mastoid.