the United States and have been so wisely utilized there, it can hardly be doubted that a considerable economic saving would accrue to the community, while to the individual patient there would be given that truest source of happiness—the increased power of exercising an activity.

For much of the information in this paper I am indebted to the kindness of the Secretary (Miss M. L. Woughter) of the Society for the Relief and Prevention of Heart Disease, 370, Seventh Avenue, New York.

ACUTE PAN-SINUSITIS: A SEVERE CASE.

BY

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MANY cases of acute suppuration in the accessory sinuses of the nose never apply for treatment, the majority being looked upon as merely part of a severe "cold in the head." Of those that do come under observation some are never diagnosed, and in others the original infection is overlooked or forgotten by the greater claim of the secondary infection to which it may have given origin.

This helps to explain why many illnesses are dated, both by the public and the profession, from "a cold" or "chill." This head-cold, in such cases, may have been the primary infection, causing a sinusitis from which originated (a) symptoms in the neighbouring region (pharynx, eyes, ears, head,

Inhalations of menthol steam were frequently given. The expelled pus, examined bacteriologically by Dr. E. Burnet, produced a growth of staphylococci, streptococci, and pneumococci.

The flow of pus from the region of the frontal sinuses soon diminished and frontal headache ceased; the suppuration from the maxillary sinuses persisted, in spite of lavage; but the most persistent discharge and headache came from the sphenoidal sinuses. The sphenoidal sinusitis not only produced a bilateral parietal headache, but a still more intense ache in the typical situation of the occipital region and nape of the neck. Here the headache was so acute that we were very glad to have the opinion of Dr. Farquhar Buzzard. The sinusitis had persisted for nearly three weeks when he saw the case on November 13th. He decided that there was no invasion of the central nervous system.

During this long-drawn-out suppuration Dr. Giordani and I had been keeping a careful watch for secondary infections, but the eyes, ears, throat, lungs, heart, kidneys, and digestive tract remained unaffected. About the twentieth day the patient complained of pain on the right side of his neck, and we found the thyroid gland swollen and tender: This proved to be the beginning of the only secondary infection which the patient developed.

On November 19th—the twenty-fifth day of illness—both maxillary sinuses were lavaged and found quite clear; there was only a trace of muco-pus from the sphenoids; the headache had disappeared and the temperature was round about 99°. But the pain and swelling in the neck persisted; the temperature rose again in a few days to 103°, and, although

face), or (b) in more distant organs (lower respiratory and digestive tract), or (c) interference with general health (simulating typhoid, malaria, neurasthenia, etc.). Doubtless many a bronchitis or pneumonia, beginning with a "cold in the head," has owed its infection to pus in an accessory sinus.

It is quite uncommon for an acute sinusitis to run a course of any length without some secondary infection becoming the predominant disease. I have published two of my own cases of sphenoidal sinusitis in which death resulted with cerebral and ophthalmic complications, together with forty other cases recorded in literature.¹ All these forty-two cases were verified by a *post-mortem* examination.

But it is so uncommon for a sinusitis to remain acute for any length of time, without secondary infections, that I think it might be interesting to record the most severe and persistent case I have ever met with. The temperature chart alone indicates the length and severity of the resulting illness. The only complication was the rare one of an acute thyroiditis, and this did not develop until the third week of the sinusitis. (See chart.)

On October 31st, 1922, I was called by Dr. Giordani to see a foreign diplomatist. For four days previously his temperature had been raised, reaching even 104°. He looked very ill, complained bitterly of his headache, chiefly frontal, and was sweating freely. There was copious pus in both nostrils; all the sinuses were involved. The maxillary sinuses were lavaged and abundant pus expelled.

This lavage had to be repeated twelve times in sixteen days before the maxillary sinuses cleared. During this time the inflammation in the cavities was so acute that on certain occasions the abundant and clotted pus was uniformly pinkish. Discharge from the sphenoidal sinuses was encouraged by local applications of cocaine and adrenaline.

there was no definite suppuration, Mr. Legg, who had been called in consultation, thought it well to cut down and examine the thyroid gland. This was done on November 22nd—nine days after the first symptoms referable to the neck and in the fourth week of the sinusitis. The right lobe of the thyroid gland having been exposed through a transverse incision, punctures were made in various directions and the gland explored with forceps and dissector—but no pus was found. During the operation it was remarked that the connective tissues of the region were oedematous and the veins very distended. Two drainage tubes were left in place; local symptoms (pain and swelling) improved next day, and a week later pus began to escape from one tube and continued for a week, with a normal temperature (see chart). Cultures gave the same organisms as had been found in the nasal suppuration. The left lobe of the thyroid enlarged for a week—just as the right lobe was subsiding—but it caused no pain and went down in a few days.

On December 2nd, five weeks after I had first seen him, the patient was convalescent, but it was not until the end of January that he was able to come to my study for examination. Except for a little fistula in his neck no local symptoms of his severe illness remained. There was no trace of pus in his nose or throat, and transillumination of the formerly opaque maxillary sinuses showed that they were quite clear.

Although organically sound he was looking very shaky, and no wonder, for he had been a very sick man for three whole months. This prolonged illness, entailing fever, severe pain, and insomnia, had all resulted from an acute pan-sinusitis. Complications had, I believe, been averted because the case was diagnosed early and treated seriously. The local treatment has been described. The regular lavage

of the maxillary sinuses prevented stagnation in these cavities and its consequent back-pressure and reinfection of the deeper sinuses. The frontal sinuses drained spontaneously and were the first to clear. The drainage from the sphenoidal sinuses was encouraged by daily, or twice daily, introduction of strips of gauze (between the middle turbinal and septum) soaked in equal parts of 5 per cent. cocaine and adrenaline. I was very glad that I had refrained from any operative treatment on these deeper cavities. The traumatism entailed might only—in such an acute infection, and in the narrow and sensitive nose—have resulted in further blockage to the outflow and might possibly have spread infection to other areas through the blood or lymph streams. Pain, insomnia, fever, and other symptoms were treated on general principles. Local warmth (by woollen nightcap and radiant heat) gave relief.

I have never seen a fatal case resulting directly from acute sinusitis, diagnosed in good time, and treated on the lines described in this paper. In the two fatal cases of sphenoidal sinusitis which I have referred to, secondary infection of the meninges or cavernous sinus had developed before the patients came under observation.

The care taken of the present case was successful in fending off all complications, except the curious acute thyroiditis. This, I imagine, was an infection via the lymphatics, from the pharynx or tonsil, due to the pus descending from the sphenoidal sinuses.

The moral I venture to draw from this case is that all cases of acute sinusitis should be regarded with much more consideration than they generally receive. If carefully treated there are very few which would not recover completely. Most of the chronic cases seen in practice and requiring operative treatment commenced originally as acute cases. Had they then been treated carefully, they would not have drifted into the chronic infections which entail so much ill health and often demand prolonged attention and sometimes anxious operative measures.

The treatment of acute sinusitis is largely in the hands of the family physician. Except for exploratory puncture and lavage of the maxillary sinuses, operative treatment is rarely called for in an acute case.

REFERENCE.

¹ Transactions of the Medical Society of London, vol. xxix, 1906.

OPTIC NEURITIS OF SPHENOIDAL SINUS ORIGIN: OPERATION: CURE.

(With Special Plate.)

BY

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THERE are various causes of retrobulbar neuritis. I am able to give a very full report of a case in which the onset of this affection was rapid and the cause was undoubtedly suppuration in the sphenoidal sinuses.

Previous History.—A young man of 24 reported that, as a boy, he had worn glasses, but that on joining the army, during the war, he was told that glasses were not necessary. He served for three years in the army; chiefly on the Italian front, and during his service he developed a yellow-green post-nasal catarrh with occasional cacocsmia. After demobilization in 1919 he noticed that he had more need of handkerchiefs and had to

the left sphenoidal sinus, owing to the prominence of the middle turbinal. There were numerous carious teeth, and the patient was at once sent to Mr. W. Hern for attention to them.

Ophthalmic Report.—On the same day he was examined by Mr. Treacher Collins, who reported as follows:

"Has had aching pain in left eye for three days, which then ceased. Eyeball still tender to pressure, but not so much so as at first. Experiences sharp pain on movement of his left eye upwards. Vision of right 6/9 partly; -1 cyl. 120°=6/6; 1 letter. Left 6/60 unimproved. Left pupil acts to light but does not maintain contraction 'hippus.' Ophthalmic examination shows marked swelling of the left optic disc, blurring of its margins, and obscuration of retinal vessels. The swelling of the disc = 6 D. Right optic disc normal. Field of vision in left eye somewhat contracted up and in (vide Chart 1)."

Treatment.

The same evening the patient entered a nursing home, where he was given radiant heat baths to his head, for twenty minutes three times a day, with steam inhalations of menthol and eucalyptus every two hours, and a few doses of aspirin. The

LEFT I.

CHART 1.—Optic neuritis of sphenoidal sinus origin. November 28th, 1922.

wash his nose out. When fatigued he was subject to headache over the left eye.

Sudden Onset.—On November 20th, 1922, while on business in Germany, he felt depressed all day, and in the evening was surprised to find that he could not see anything clearly from the left eye. He consulted Professor Römer of Bonn on November 23rd, who found that there was inflammation of the optic nerve of the left eye, negative Wassermann reaction, and that an x-ray photograph showed some opacity of the accessory sinuses. A written report advised that the trouble was serious and threatened the eyesight, and that it was a question for a rhinologist whether the condition would abate with conservative treatment or require operation on the sinuses.

Nasal Condition.—On November 28th I found pus on the floor of each nostril and the roof of each choana. Exploratory lavage of the maxillary sinuses showed them to be clear. X-ray examination by Mr. Coldwell revealed marked obscurity of the frontal and sphenoidal sinuses. It was impossible to catheterize

LEFT II.

CHART 2.—Optic neuritis of sphenoidal sinus origin. February 17th, 1923.

left eye was kept covered so as to exclude all light. This treatment was continued for three days, but, as there was no improvement in his eyesight, I proceeded to operate on the sphenoidal sinuses on December 2nd.

Operation.—The area of the nose was prepared half an hour beforehand with strips of ribbon gauze soaked in equal parts of 5 per cent. cocaine and adrenaline, and tucked in between the middle turbinal and the septum. This rendered the nose so ischaemic that, when placed under a general anaesthetic, it was not difficult to introduce Killian's long duck-billed speculum between the septum and the middle turbinal, so as to snap and prise outward the latter body. This proceeding avoided the removal of a healthy and useful middle turbinal, with the traumatism attendant on its amputation. The ostium of each sphenoidal sinus was then well opened with punch forceps.

Immediate Results.—Four days were allowed to elapse for the nose to recover from the inevitable reaction. During this time there was no change in the eyesight, although the treatment