THE DIAGNOSIS OF BRANCHIAL CYST;

WITH A NOTE UPON ITS REMOVAL.

BY

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It is common to find a branchial cyst mistaken for breaking-down tuberculous cervical glands. Eleven cases have come under my observation where this error had been made, and in not a few of these treatment for tuberculosis had been persisted in.

Branchial fluid, on being aspirated, looks just like tuber-

of the sterno-mastoid (Fig. 1). It is usually found coming from the deeper planes of the neck around the anterior border of this muscle.¹ But as the sterno-mastoid is thinned and flattened over the cyst this relationship is seldom clear until the muscle has been rendered taut.

If a swelling answering to the above description is found the absence of enlargement of the cervical glands when the neck is systematically palpated should raise in the examiner's mind the question, "Is this a branchial cyst?" This question can be promptly settled by the following simple confirmatory test.

Confirmatory Test for Branchial Cyst.

After the skin has been sterilized a little of the fluid

FIG. 1.—Typical branchial cyst. Note relationship to upper third of the sterno-mastoid.

FIG. 2.—The cyst has been rendered flaccid by aspiration of half its contents, which considerably facilitates total enucleation.

culous pus, a coincidence which, combined with an implicit trust in the bacteriological report, is the fundamental basis of this confusion.

"No tubercle bacilli found; cultures sterile." We have rightly come to look upon this familiar report as confirmatory evidence of tubercle. But it should be borne in mind that branchial fluid is also often sterile.

In about 10 per cent. of cases tubercle bacilli are found in tuberculous pus. In such cases it would appear ridiculous to suggest the possibility of an alternative diagnosis. The following exceptional case proves the contrary. A branchial cyst was removed by operation, and its wall, subjected to histological examination, revealed stratified squamous epithelium upon a basis of lymphoid tissue. The fluid aspirated before operation, and the contents of the specimen after operation, showed numerous tubercle bacilli. Doubtless organisms can penetrate the epithelial envelope from its ensheathing lymphoid covering, which in turn is connected up with the cervical lymphatic system.

Breaking-down tuberculous glands are exceedingly common. Branchial cyst is comparatively rare. The difficulties which surround the diagnosis of the latter are admittedly formidable, but they are by no means insurmountable.

Clinical Features.

Branchial cyst usually makes its first appearance in early adult life. The onset is often curiously abrupt, after which the cyst begins slowly to increase in size. Recurrent attacks of inflammation in the cyst are usual.

Branchial cyst is nearly always related to the upper third

is aspirated. It will usually run quite easily through a needle of an ordinary hypodermic syringe. A drop of the aspirated fluid is placed upon a slide, and covered with a cover-slip. The slide is then examined under the microscope with a one-sixth power lens. The presence of numerous cholesterol crystals at once makes the diagnosis certain. Fig. 3 is a photomicrograph of a drop of fluid removed from a branchial cyst for the purpose of confirming the diagnosis.

FIG. 3.—Photomicrograph of branchial fluid. The abundance of cholesterol crystals is characteristic.

Removal of a Branchial Cyst.

A branchial cyst should be completely removed by dissection. It may be conveniently exposed by a transverse incision following the line of the creases of the neck. Except in small, superficially placed cysts it will be found best to divide the sterno-mastoid. Beneath this muscle the spinal accessory nerve will be found bearing a constant relationship to the cyst wall. The nerve should be isolated.

Branchial cysts often run deeply into the neck, and may extend upwards as far as the base of the skull. In this respect they resemble an iceberg, for the greater bulk of the mass is beneath the surface. It is most desirable to remove the cyst intact. If the cyst bursts halfway through the operation dissection is rendered difficult, surrounding structures become endangered, and the end-result may prove unsatisfactory, for even a small piece of secreting epithelium left behind may give rise to a sinus which persistently discharges. Complete dissection of an intact cyst is almost always possible, and the operation is very much simplified if the following technique is adopted.

After carefully cleaning the superficial aspect about half the contents of the cyst are removed by aspiration. The

puncture hole thus made is covered with a piece of gauze about the size of two postage stamps. The gauze and the cyst wall are then picked up with a pair of sponge-holding forceps (Fig. 2). The gauze minimizes leakage and prevents the forceps slipping. Gentle traction may be made with the forceps at first in this direction and then in that, and the cyst wall is cleared by gauze and blunt dissection, aided here and there by a few touches of the scalpel. As dissection proceeds and the deep parts of the cyst are reached it will be found convenient to apply a second pair of sponge-holding forceps. Using these means the intact cyst may be completely enucleated.

REFERENCE.

¹ Bailey, Hamilton: *British Journal of Surgery*, vol. x, No. 40, 1923.

TONSIL-SUCTION FOR DIAGNOSIS AND TREATMENT.

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INSTRUCTIONS FOR USE.

In Diagnosis.

The patient sits facing a good light and removes dentures. The diagnostic tonsil-sucker is warmed in hot water to prevent condensation. With the stem against the angle of the mouth the sucker is pressed firmly against the opposite

tonsil, the suction ball is well squeezed, and then released with the finger over the air-hole on the stem. The tonsil is thus extroverted, and any pus in its crypts is seen—yellow on the red tonsil—inside the glass funnel. The glass funnel is now given a combined pull and a slide towards the cheek, so that the pus is picked off by the incurved glass edge; excessive suction will prevent the sliding movement. This needs a little knack. Repeat to ensure that all pus is removed.

The pus can be microscoped (for polymorphs and germs), and the patient is requested to see it and smell it (it is usually offensive) in the funnel to convince that treatment is necessary.

The Therapeutic Tonsil-sucker.

This glass funnel is similar to the diagnostic one, but has a wider mouth, thicker rim, and its edge is not

incurved. A rubber finger-stall (medium thickness) is wetted and slipped over the glass funnel. It should form a flat diaphragm across the funnel mouth. On this the antiseptic cream is thickly spread. This is pressed against the tonsil and strong suction applied. The crypts of the extroverted tonsil are thus thickly smeared with the antiseptic cream. Pressure is then relaxed (by opening the vent-hole); the tonsil subsides into its usual shape, carrying the antiseptic into the crypts and spaces from which the pus has been evacuated. This manœuvre should be repeated thrice in rapid succession before withdrawal.

After use the glass funnels should be cleaned and kept in the glass jar of weak carbolic provided. The rubber ball acts as stopper to the jar. The finger-stalls can also be cleaned and kept in this solution, and used again. For more rapid sterilization I use a saucepan.

The antiseptic cream contains mercury oleate, bismuth, kerosene (for its creeping qualities), and vanishing cream. Better formulæ are being searched for.

As an extra safeguard, the portion of the glass tube which enters the patient's mouth is enclosed in a sleeve of rubber tubing.

Treatment is repeated at least once a week until no more pus is found. Then the interval can be lengthened to 10, 14, 21, or 28 days. The course is usually longer in older patients than in younger, though the health may be benefited long before the pus is all gone. Tiredness, pallor, anorexia, rheumatism, and other subinfective toxic symptoms often quickly disappear. In quinsy and acute tonsillitis it will probably be found that septic fluid can be sucked out and tension relieved with a larger glass funnel having a layer of cambric tied flat across its mouth.

Illustrative Cases.

CASE I.

Dr. X., aged 35. Had bad tonsillitis after sleeping in a damp bed in 1919.

Tonsillitis recurred with rheumatic pain and swelling in ankles, finger-joints, and back in March, 1927. I saw him first five months later; the fingers and ankles were still swollen, with flat feet. Though the tonsils looked normal I could suck liquid pus out of them having the same smell as the nasty taste he was getting. This pus was largely composed of polymorphs, with only a few pneumococci, bacilli, and diplococci.

At first I cleaned the tonsils twice a week by suction, later weekly, then monthly, and left various antiseptics in the crypts—for example, thymol iodide and kerosene, bipp, iodoform and kerosene, and ung. hydrarg. molle. The amount of pus rapidly diminished, and in about two months there was little or none. His rheumatism also quickly diminished, and he was able to do his practice throughout.

On December 20th he reported himself as very well and without rheumatism; the tonsils contained no pus and remain free (May 2nd). He can taste iodoform when he drinks anything hot eight hours after treatment, proving that the antiseptic is buried in the crypts. He thinks this diagnostic and therapeutic method has a great future.

CASE II.

Miss M., aged 32. Had poor health with frequent colds, sore throats, and abdominal pains and occasional rheumatism. In November, 1925, heads of cheesy pus were sucked from both tonsils. On December 20th there was no pus. In December, 1926, two beads of pus were found in the left tonsil. In April, 1927, she could squeeze beads of foul pus from her tonsils and could feel it accumulating. In May I started treating the tonsils by suction with euthymol and aristol. In July (eight treatments) her rheumatism had gone and the tonsils were almost clear of pus, but her adenoids were still sore and dirty. In September she had to have her adenoids out, and obviously this opportunity of removing the tonsils had to be taken, though they were clear of pus both by suction and in microscopic section.

CASE III.

Mrs. A., aged 57, had suffered from rheumatic neuritis in the left arm for three years. Had "always" had rheumatism in the hands and ankles, and frequent pain and swelling in the tonsillar glands. Had quinsies twenty years ago, and all teeth extracted ten years ago. Her father was crippled with rheumatism for twenty years. Pus was sucked from the tonsils. Suction treatment was started on June 22nd (menthol, aristol, calomel, glycerin). After nine treatments (September 2nd) there was no pus in the left tonsil and the glands had ceased to swell. She looked well, but was still rheumatic.

Between September 27th and October 11th she was given three injections of contrainine. On October 18th the pus in the right tonsil was nearly all epithelial debris; there were no polymorphs. On November 1st the rheumatism was wonderfully easier, and on November 29th there was no pus in either right or left tonsil.

On January 3rd, 1928, friends remarked on the wonderful change