laryngocele; the neck had been traced through the thyro-hyoid membrane, and therefore it must be outside the larynx, and, of course, a pharyngocele, to which group Godlee rightly assigned it. Mention had been made of his omission to include the artificial enlargement of the pyriform fossa with the aid of leaden discs by natives of India and South Africa for depositing stolen coins and precious stones; he had been dealing exclusively with hernias and diverticular sinuses, not with mere artificial enlargements of natural cavities—with pouches, not with pouchings—and therefore had rightly excluded from illustration and consideration the interesting specimen in St. Bartholomew's museum.

THE SORROWS OF THE SEPTUM.

BY

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THE text of this article is taken from Pliny's *Historia Naturalis* (Bk. XI, Chap. 91): "Man is the only creature from which the blood flows at the nostrils; some persons bleed at one nostril only, some at both."

Pliny made that observation nearly nineteen centuries ago. It is so simple. It is so true. It is, as I shall show, the *fons et origo* of all the sorrows of the septum.

There is no haemorrhage of greater frequency, and no haemorrhage that is sooner forgotten. For the latter reason I found it difficult when I wrote the article "Epistaxis" more than a quarter of a century ago for the *Encyclopaedia Medica* to obtain very accurate statistics of its frequency. At that time I had the opportunity of putting questions to many hundreds of patients of both sexes, of all ages, and in all conditions of health. I found that one hundred and forty-two people in a thousand had recollection of the blood dropping from the nose. For the reason stated that must be accepted as a low estimate.

I further found that epistaxis was of more frequent occurrence in the male sex. Here let me anticipate by reminding you that deformities of the nasal septum are more frequent in males than in females. We now know—and this Pliny did not tell us—that the bleeding point in the vast majority of cases is to be found in the cartilaginous septum at a spot where there is a very free anastomosis of the terminal twigs of the vessels supplying the septum.

The human face, in comparison with that of the lower animals, is characterized by being extended vertically instead of horizontally. This characteristic determines the development of the septum, and the septum determines the development of the nose. The structures entering into the formation of the septum in man are subject to delayed or excessive development. The developmental activity continues, not only up to puberty, but, in a greater or less degree, some years afterwards. With that activity there must be an increase of newly formed blood vessels, resulting in a greater tendency to epistaxis and to deformities of the septum, as shown by the formation of ridges, spurs, and deviations. The development of the septum varies with the type of race; the higher the type the more prolonged is the developmental activity and the more common are the septal deformities.

It has been necessary for me to enter into nose-bleeding as peculiar to the human race as it is the cardinal point. It is difficult to remember any condition of the septum we are called upon to treat that is not vascular in origin.

In a paper strictly limited in words it is possible to mention only the more common of these conditions—such as haematoma, abscess, fibro-angioma, septal thickening, out-growths, ridges, spurs, crests, and, last but not least, deflections of the septum. In the group of fibro-angiomata must be included not a few of those cases diagnosed and treated as sarcoma. Further, in this group must be included the "bleeding polypus of the septum." Remembering the papers which have been written, the discussions that have taken place, the time that has been spent by general practitioners in absorbing that literature on this and similar simple septal growths, how true becomes the

difference drawn between the general practitioner and the specialist—the one always struggling to make less and less about more and more, the other always straining to make more and more about less and less.

Deflections and deformities of the septum are so common that the observation of Pliny might be amplified by stating that man—that is, civilized man—is the only creature in which the septum of the nose is not perpendicular. The higher we go in the human race the more correct this statement becomes. The collective result of independent investigations of a large number of human skulls has shown that deformities of the septum are present in 80 per cent. of European skulls. Those investigations were made on dried specimens in which the cartilage was generally absent. Clinical experience teaches us that some irregularity of the cartilaginous portion of the septum is the rule rather than the exception; so that in the higher types of races the abnormal becomes the normal. On the other hand, statistics based upon the examination of skulls of the lower types showed the reverse—the septum was free from deflections and irregularities in 80 per cent.

This "sorrow of the septum" has been handed down to us in art from the days of Pliny. Some scientists, after taking the most minute measurements of the nose of the Venus de Milo in the Louvre, came to the conclusion that the septum was not absolutely in the plumb. It is conceivable that had the missing arms, which have given rise to so much discussion among would-be restorers, been present, Venus, instead of holding up her drapery, would have had the left arm uplifted and holding a mirror, and the forefinger of the raised right hand adjusting the pros and cons of undergoing a submucous resection of the nasal septum.

In making a routine examination of the nose in all cases of affections of the ear, nose, or throat, it is truly remarkable how frequently we meet with ridges, spurs, and deformities of the septum, causing no inconvenience, no symptoms, and in no way material to the case, while their presence is not known to the patient. On the other hand, it is equally remarkable that, in the eyes of some rhinologists, the very presence of a spur or a deviation is a menace to the health of the patient, and that some orthopaedic surgery in the nose would cure almost any malady. Time will not permit me to enter into detail of the indications and contraindications for surgical intervention. Experience has shown that the nasal symptoms complained of are frequently in no way due to any irregularity of the septum that may be present, and that they can be completely removed by other means without removing or operating upon the nasal septum. Those other means must be left for another occasion.

This brings me to the much smaller group of cases in which orthopaedic surgery upon the septum is called for. First of all the choice of the operation. Here again time will not permit me to enter into the relative merits of the numerous operations that have been devised for the correction of septal deformities, and of the one for the removal of the offending septum. It is now some twenty years since the operation for the removal of the septum, bony as well as cartilaginous, by submucous resection was introduced. The number of instruments that have been devised for the operation, and the number of septa that have been dealt with by submucous resection, justify the statement that it would be difficult to mention an operation in minor surgery that has received so much attention, and (judging by the way it is referred to by the younger surgeons as *the septum operation*), we might add, to the exclusion and in ignorance of all other operations upon the deformed septum. It has become a fetish. There is increasing evidence that the general public has had enough of the removal of pieces of gristle from the nose. The end-results, however gratifying to the surgeon, are not always equally satisfactory to the patient.

The operation from the first appeared to me to be faulty surgery, inasmuch as it deprived the patient of a rigid septum and thereby impaired the nose as an organ of respiration. The nasal passages after the operation are left at times too patent, the septum too thin, and patients complain of symptoms due to the flapping of their membranous septum in the passage of air. Further, in

spite of reduction of the anterior ends of the middle turbinated bodies at the time of the removal of the septum, very considerable hypertrophy of these structures has ensued. The patient, as the result of the above, then seeks relief for tightness across the upper part of the nose and nasal obstruction.

The operation is extremely difficult where it is most needed. In the worst rumped septa, however experienced and skilful the operator, sloughing and perforation often result, leaving the last state of that septum worse than the first. The cases in which it is least needed yield the best results; those in which it is most required are at times wisely left alone. Further, general anaesthesia for operations upon the upper air passages, particularly when prolonged, is attended with greater risk. Lastly, it is questionable whether the end-results of rectifying the nasal septum by removing it by submucous resection are any better than those formerly obtained by other operations.

To avoid unnecessary discussion let me say I am in favour of a limited submucous resection in removal of spurs and ridges, and of the septum when badly rumped. The procedure I follow when orthopaedic surgery on the septum is inevitable may be described as a modification of Moure's operation.

Owing to their complete obsession by the submucous resection and removal of the septum there must be among the rising generation of rhinologists many who have not seen Moure's operation performed, and have not even seen the instruments. In spite of the arguments about the resiliency of cartilage, I may claim to have got good results, and certainly never the unfortunate troubles that have followed submucous resection and removal of the septum. Bear in mind that Nature has decreed that the nasal septum of civilized man is not to be in the plumb; that would be, as I have shown, abnormal and peculiar to the savage types. Therefore, why should we try to improve upon Nature by depriving a person of a rigid septum—necessary for respiration?

The results of the submucous resection and removal of the septum taken on the whole are not satisfactory; for reasons I have given it is not sound surgery. The paper has been written to review the position and to promote discussion. The time for half-truths has gone by; I cannot expect those who have spent years in acquiring skill in the submucous resection operation to agree with me, and I shall be sadly disappointed if this paper is not criticized.

DISCUSSION.

Dr. W. S. SYME (Glasgow) said that partial nasal obstruction was not detrimental to hearing in a marked degree. The aim of the operation should be functional rather than anatomical. He emphasized the importance of removing deformities of the lower part.

Mr. HERBERT TILLEY (London) said that no inconsiderable amount of the disrepute that had fallen on the operation was due to its imperfect performance. He instanced four of the common causes of failure: (1) Leaving untouched a prominent premaxillary crest in the postero-medial region of the vestibule, against which the ala nasi was drawn during inspiration. (2) Neglect to remove a prominent teat-like prominence at the junction of the vomer, central plate of the ethmoid, and the cartilage of the septum. (3) Failure to resect a posterior deviation of the central plate of the ethmoid and vomer. (4) The overlooking of a deviation of the bony "nasal crest" of the superior maxilla. If the cartilage alone was removed, the septum would still be held across to the crest when healing was complete. Mr. Tilley held that in long-established deafness due to what was termed "chronic otitis media," resection of a deviated septum produced no improvement in the hearing. If, however, inflation of the tympana brought about a temporary but definite increase in hearing, then any form of nasal obstruction should receive appropriate treatment, and good results might be anticipated by removing catarrhal conditions of the middle-ear cleft. No condemnation could be too severe of those who performed submucous resections in cases of genuine oto-sclerosis. Such operations must be due either to ignorance of the pathology

of that condition or to other considerations which it would be scarcely worth while to discuss. To abuse the confidence of patients by telling them that the proposed nasal operation might not cure the deafness but it would probably prevent it from getting worse, at least suggested the question, "How can you prove that?" Such operations not only added to the "sorrows of the septum," but also to those who were jealous of the fair fame of this special department of medicine.

Mr. NORMAN BARNETT (Bath) found that rigidity of the septum rapidly returned after submucous resection, and that failure in procuring a good result was often due to overlooking enlarged posterior ends of the inferior turbinates.

Mr. ERNEST B. WAGGETT (London) said that the septum operation was not performed often enough, nor well enough. He added that leaving a spur from the vomer was a common cause of failure.

Mr. E. D. D. DAVIS (London) spoke glowingly of his personal experience of undergoing submucous resection; his previous troubles of nasal obstruction and prolonged "colds" had quite disappeared. He mentioned that one reason of unsuccessful result was that the septum was not always responsible for the obstruction. He urged submucous resection before operations on the sinus, and particularly on the ethmoid, if the septum was deflected, both to provide access at the time of operation and to facilitate drainage afterwards.

Dr. IRWIN MOORE (London) said that, in his opinion, the secret of success in the operation of submucous resection of the septum was the removal of as little of the cartilage as possible. The majority of deviated septa were developmental in origin, the obstruction being caused by the lower margin of the cartilaginous septum slipping off the superior maxillary ridge, followed by ossification in this situation. In these cases he separated the cartilage with scissors from the maxillary ridge, after which he removed the bony mass obstructing the inferior meatus. The "spring" (deviation) of the cartilage not removed could be counteracted by incising the cartilage (from above downwards) at distances of a quarter of an inch (from before backwards), which allowed the attached segments to adjust themselves in the vertical position. If this method was pursued no "flapping" of the septum would follow the operation. He had operated upon a very large number of patients and seen a great deal of the work done by other operators, and he was satisfied that the operation of submucous resection of the septum, as carried out in the majority of cases, was a credit to the specialty in this country.

Dr. DOUGLAS GUTHRIE (Edinburgh) advocated the use of local anaesthesia in this operation. Dr. W. HILL (London) said that the exigencies of hospital practice necessitated the extensive resort to local anaesthesia in septal and other nasal operations. In private practice, however, he relied mostly on a general anaesthetic, as a certain number of patients complained afterwards of the want of absolute efficiency of local anaesthesia. In his own person he would prefer a general anaesthetic if he had to have a septal operation. Local anaesthesia was much more frequently and extensively used on the Continent and in America than here, not merely for septal operations and tonsillar excisions, but for such major procedures as radical antral and mastoid operations and excisions of the larynx. Dr. SCOTT STEVENSON (London) advised deep general anaesthesia. Mr. H. BELL TAWSE (Nottingham) said that, with the exception of two cases in children under 14 years of age, he had for the past twenty years used local anaesthesia. Referring to "flapping" as an occasional sequel of submucous resection, he asked how it might be remedied. Mr. E. B. WAGGETT (London) replied that such a condition was readily cured by making a perforation in the posterior part of the septum sufficiently large to allow the air pressure to be equalized in both nostrils. Mr. DONALD WATSON (Bradford) favoured local anaesthesia; his personal experience under it was that he felt no discomfort, only a sensation of cracking of bone.

Mr. A. R. TWEEDIE (Nottingham) mentioned that one of the reasons for lack of success in the operation was a pre-existing collapse of the alae nasi. He referred to the iniquity of operating on the septum in oto-sclerosis and giving the patient to understand that the hearing would benefit. In the case of catarrhal deafness not only did he require improvement in hearing after inflation before advising operation, but also a positive Gellé test and a mobile membrane, always assuming that bone conduction was at least normal. He used local anaesthesia as a general rule, even in children of 8 years. He recommended an operation for access in intranasal operations. After removing the deformity he replaced any cartilage he could.

Mr. KELSON (London) objected to packing the nose after operation.

The PRESIDENT (Dr. Brown Kelly) pointed out that nasal obstruction often varied from day to day, was frequently mainly due to turbinal turgescence, even though the septum was deflected. Submucous resection was performed not only to widen the narrow nostril but also to narrow the too-open side. He deplored mutilating the inferior turbinates, and did not favour operation in patients younger than 17 years of age.

Dr. JOHNSON HORNE in reply, expressed his pleasure at the favourable way in which his paper had been received. One speaker had completely and concisely expressed one contention of the paper—that an operation upon an obstructing nasal septum should aim at a functional and not at an aesthetic result. Regarding the choice of local or general anaesthesia, his guiding principle had been that in hospital such work should be done as would be required in private practice; in the latter general anaesthesia would be preferred more often than not. He was glad that reference had been made to the enlargement of the posterior ends of the turbinated bodies as a factor in nasal obstruction. Had time permitted, that was one of the causes, other than irregularity of the septum, he had intended to touch upon. The importance of posterior rhinoscopy as a routine part of an examination of the nose could not be overstated, and the surprises encountered at times would fill a chapter.

ACUTE RETROPHARYNGEAL ABSCESS IN CHILDHOOD.

BY

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Two varieties of retropharyngeal abscess are distinguished in most textbooks. Bokai,¹ whose classical paper on the subject deals with 287 cases, showed that many were of lymphatic and not of spinal origin. Indeed, the spinal variety is relatively rare, coming to the notice of the surgeon on account of well marked signs of tuberculosis of the cervical vertebrae, and, as a rule, presenting little difficulty in diagnosis. The acute variety of abscess, on the other hand, is probably fairly common. Insidious in origin and often showing no characteristic sign or symptom, it frequently escapes diagnosis, or is only discovered at *post-mortem* examination. The condition perhaps more frequently escapes recognition than any other acute disease in childhood, and, if untreated, almost invariably ends in death. On the other hand, when a retropharyngeal abscess is recognized and opened the prognosis is good and the patient recovers rapidly.

Anatomical Data.—In order to understand the pathology of retropharyngeal abscess various anatomical facts must be kept in mind. The prevertebral fascia passes in front of the cervical vertebrae and prevertebral muscles, and separates the visceral compartment containing the trachea and oesophagus from the vertebral compartment containing the vertebrae and muscles. In front of the prevertebral fascia, and closely adherent to it in the middle line, is the mucous membrane of the posterior wall of the pharynx. Between the fascial and mucosal layers, in the potential space on either side of the mid-line, known as the space of Gillette, lies a group of lymphatic glands.

Those are retropharyngeal glands, which are present in infancy, but gradually atrophy and disappear as the child grows older. They are in direct communication with that chain of glands which lies behind the internal carotid artery sometimes called the posterior carotid chain.

Pathology.—Infection of these posterior carotid glands may readily pass to the retropharyngeal glands and give rise to abscess formation; this is probably the usual sequence of events in acute retropharyngeal abscess. In two-thirds of the cases there is obvious enlargement of cervical glands; this enlargement may be of tuberculous nature. Although McLean and von Hofe² state that retropharyngeal lymphadenitis is rarely tuberculous, unless accompanied by vertebral caries, we have in two cases of retropharyngeal abscess found definite evidence of tuberculosis in the cervical glands, which were subsequently excised. The most frequent cause of abscess formation, however, is the streptococcus, and this organism may be isolated from the pus in the majority of cases. Waugh³ regards the tonsil as the source of infection, as the condition is never found in children whose tonsils have been removed. Definite enlargement of the tonsils is present in about 80 per cent. of patients who suffer from retropharyngeal abscess. Trauma is a possible cause; thus Alexander⁴ saw two cases following the attempted removal of adenoids, and Bokai includes a case caused by the impaction of a metal button in the nasopharynx. Another possible cause of retropharyngeal abscess is the direct spread of pus from the middle ear. Middle-ear suppuration was present in one-fifth of our cases, but there was also glandular enlargement in each, so that no case could be regarded as "otitic pharyngeal abscess," a rare condition which has been described by Dan McKenzie⁵ and others. Even rarer is the acute non-tuberculous osteomyelitis of the cervical vertebrae observed by Kirmisson.⁶

Etiology.—The condition appears to be commoner in boys than in girls, and is said to be more prevalent in winter, although eight of the twenty patients noted in the accompanying table came to hospital during the months of May, June, and July.

Table to illustrate the Writer's Series of 20 Cases of Retropharyngeal Abscess.

(Boys 14; Girls 6.)

Age.						
0 to 1 year	...	...	...	...	...	7
1 to 2 years	...	...	...	...	...	4
2 to 3 "	...	...	...	...	...	3
3 to 4 "	...	...	...	...	...	2
4 to 5 "	...	...	...	...	...	1
5 to 6 "	...	...	...	...	...	1
6 to 7 "	...	...	...	...	...	2
Diagnosis.						
Dyspnoea	...	...	...	...	...	All
Dysphagia	...	...	...	...	...	5
Enlarged glands	...	...	...	...	...	13
Otitis	...	...	...	...	...	4
Nasal obstruction	...	...	...	...	...	6
Epistaxis	...	...	...	...	...	1
Temperature over 100° F.	...	...	...	...	...	8
Temperature under 100° F.	...	...	...	...	...	5
Result.						
Abscess opened (cure)	...	...	...	...	...	14
Spontaneous rupture	...	...	...	...	...	2
Swelling subsided	...	...	...	...	...	1
Death (sudden)	...	...	...	...	...	3

The organism was found in 8 cases (streptococcus in 6, pneumococcus in 2).

Age Incidence.—Most of the patients are under 1 year of age. McLean and von Hofe report 77 cases, of which 55 (71 per cent.) were under 1 year, while Frank⁷ relates 74 cases, of which 4 were adults. The remaining 70 were all under 10 years, and 66 (90 per cent.) under 3 years of age, the youngest patient being an infant aged 3 weeks. Koplik⁸ observed 77 patients under 10 years of age.

Symptoms.—The most characteristic symptom, almost invariably present, is difficulty of breathing. This may be attributed to bronchitis or laryngeal diphtheria, and may even lead to the fatal mistake of performing tracheotomy, as in one of the cases reported by Pearson.⁹ If the abscess extends far up into the nasopharynx it will, of course, cause nasal obstruction, but, as a rule, the abscess tends to "point" just opposite the upper aperture of the