SOCIETIES' PROCEEDINGS

ROYAL SOCIETY OF MEDICINE—SECTION OF LARYNGOLOGY

December 4th, 1936

President—LIONEL COLLEDGE, F.R.C.S.

Bronchospirometry and its Clinical Application, with a Short Account of Bronchial Catheterization

The opening paper read by Dr. PAUL FRENCKNER and Dr. STIG BJÖRKMAN is published in this issue of the *Journal of Laryngology and Otology*, Vol. LII, No. 4, pp. 233-48.

DISCUSSION

A. TUDOR EDWARDS said that he had had the opportunity, eighteen months ago, of hearing Professor Jacobæus discuss bronchospirometry in this country, and an opportunity was afforded of seeing some of the advantages of the method. He thought that bronchoscopy was reaching the stage at which renal surgery was some years ago, when investigations were begun on the apparently normal side in order to determine the safety or otherwise of removal of the diseased kidney on the other side.

He did not know whether bronchospirometry experiments had been carried out on patients who had lost by operation a portion of the lung as, for instance, after lobectomy, apart from the experiments in tuberculosis, or whether these experiments had been done on cases of carcinoma of the lung. In doubtful cases of tubercle when the question of operation arose it was of value, and showed a great and useful field.

PATRICK WATSON-WILLIAMS asked whether in the course of his research Dr. Frenckner had the opportunity of investigating the rate of interchange of respiratory gases, i.e. the rate of oxygenation and expiration of carbon dioxide according to varying pressures of the air in the bronchioles.

PAUL FRENCKNER (in reply) said he had had many cases of tuberculosis, cancer, and pulmonary collapse which showed a decrease in the oxygen-intake, with a decrease of function. The most striking finding was that the X-ray and physical examinations showed that there might be extensive pathological changes and still

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good pulmonary function, and, *vice versa*—a decrease of function despite an apparently intact lung—though with enlarged glands in the hilus.

In answer to Dr. Watson-Williams : Difference in pressure seemed to depend on obstruction in the bronchi ; he did not know why the pressure should be high or low.

Simplified Œsophagoscopy : Œsophagoscopy without Anæsthesia, without Head-rest, and without Assistance

By S. BÉLINOFF (Sofia)

DURING the last five years alone, over 300 patients have been admitted into the Laryngological Clinic at Sofia, under my charge, suffering from an acute and chronic corrosive œsophagitis, caused by swallowing—(mostly with suicidal intent) caustic soda and other corrosives. The examination and treatment of these cases necessitated over 1,000 œsophagoscopic examinations.

It has been our experience that œsophagoscopy can be considerably simplified by performing it : (1) without anæsthesia ; (2) without a head-rest ; (3) without assistance.

(1) The principal aims of anæsthesia are abolition of the sensitivity of the mucous membrane, diminution of painful pressure on the dental arch and vertebral column, suppression of cough, vomiting and salivation, and elimination of apprehension and psychical excitement.

Superficial sensitivity plays, as our experience has shown, only a minor part in the disagreeable sensations of a patient undergoing examination and, at all events, repeated painting of the mucous membrane of the pharynx with a solution of cocaine is not less disagreeable than the introduction of the instrument. Cocainization does not relieve the pressure on the dental arch and spinal column at all and, instead of quieting the cough, vomiting and salivation, it tends to exaggerate them. Finally, the application of a cocaine solution does not lessen the apprehension and psychical hyperexcitability.

Briefly, these are the reasons for œsophagoscopy without anæsthesia, and you have seen, on the screen, patients who have undergone two or more examinations in the course of a week without complaint and—it is important to note—without any complications ensuing.

(2) The second simplification on which we insist is to perform the œsophagoscopy without a head-rest.

It is our invariable practice to perform œsophagoscopy with the patient in a dorsally recumbent position. He is easily controlled, his head is freely movable, and secretions can easily escape or be

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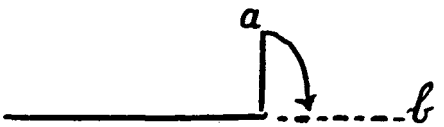
removed. All these advantages are lost in the sitting position and this position cannot therefore be recommended. The patient's head should be lowered to the maximum extent and his shoulders must project below the level of the table.

We make use of the flexibility of the vertebral column which, in all cases, is sufficient to enable the curve between the mouth and the œsophagus to be freely passed (*see* diagram). This condition renders the use of a head-rest superfluous, because the advantage of the vertebral flexibility is lost if the head rests on an immovable object.

We have found that the head-rest of Haslinger and also the method employed by Chevalier Jackson, in which the patient's head is supported on the assistant's arm, while his elbow rests on his knee, are a hindrance rather than a help.

(3) Finally, we work without an assistant, a third simplification.

By lowering the head of the patient synchronously and in harmony with the progress of the œsophagoscope, the operator can easily find or feel the moment when the curve between the mouth and the œsophagus is straightened and at this moment introduce the instrument into the œsophagus (see diagram). Thus the aid of an assistant is superfluous.



Instrumentarium.—All instruments must be in irreproachable order. We use Haslinger's œsophagoscope, which provides perfect illumination, is of light weight and best fits the œsophageal orifice. The instruments of Brünings and Kahler for œsophagoscopic work are not so convenient.

There is, however, one condition essential for successful œsophagoscopy—which cannot be simplified—that is, the *perfect technique of the operator*.

The operator must possess a thorough knowledge of the anatomy and topography of the region to enable him to slide the instrument down without searching for landmarks. Naturally, repeated withdrawal and repeated introduction should be avoided. Precise and rapid action is essential. The operation, taking but a few seconds, is over before the patient has had time to react and before the nervous mechanism producing cough, vomiting, and salivation, comes into action.

I have endeavoured to explain how œosphagoscopy may be simplified. The anæsthesia is substituted by deft and delicate manipulation, the head-rest by rapidity and sureness of action, the assistance—by the skill and authority of the operator.

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[A film exhibited showed the following :—

(1) Œsophageal stenosis, caused by sulphuric acid eight months previously.

(2) Total atresia of the œsophagus, caused by caustic soda ; eighth bouginage.

(3) Œsophageal burns, caused by nitric acid, four days previously. Aspiration of secretions.

(4) Introduction of a pierced metal wedge into a stricture. Method of treatment elaborated by the exhibitor.

(5) Œsophageal burns four years old. Introduction of dilator.]

Discussion

V. E. Negus said that in discussing with thoracic surgeons the question of lung suppuration it had been felt that there was a difference of conception—that they were talking of two different things. The laryngologist said he could cure a number of cases by bronchoscopic means only, without an external operation, and it was sometimes said that it was a different condition with which the thoracic surgeon had to deal. It therefore seemed necessary to divide the diseases into two classes : those with suppuration within the bronchi, without disintegration of the parenchyma, and others in which the lung had broken down and left a large cavity, which might be lined, not by ciliated epithelium, but by squamous-celled epithelium. To-day cases had been shown in which there was a fluid level, which one would have thought would not be cured by bronchoscopic means alone. But the reader of the paper had cured those cases, as shown by the skiagrams and the reports on the cases. That showed that every case of abscess should be given the advantage of the bronchoscopic method, and this contribution might make laryngologists more persevering.

Dr. Bélinoff's film showed his method almost as well as if the patient was present ; the tube was in and out again before the patient had time to get alarmed. In England some difficulty with the crico-pharyngeal sphincter was anticipated, and it might well be that the British laryngologist was too deliberate, thus giving the sphincter the opportunity of being on its guard. As Dr. Bélinoff performed œsophagoscopy the sphincter was not given the chance to rebel.

E. Watson-Williams said that with regard to performing œsophagoscopy without anæsthesia, probably Dr. Bélinoff realized that he was preaching to the converted. In his (the speaker's) experience it was almost always quite easy to pass the endoscope without any anaesthetic in the case of children up to the age of three. It was indeed remarkable how little the procedure seemed to disturb the patients. In the case of adults he had been used to passing the œsophagoscope with the patient sitting up ; this posture seemed to

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reassure them ; there was less suggestion of " an operation ". The really difficult cases were children aged from four to fourteen : they were easily frightened, and difficult to reassure, would fight desperately, and were too strong to be easily controlled sufficiently to make the procedure safe.

G. EWART MARTIN said that he had carried out bronchoscopy for sixteen years. At first he was told that nothing could be done for the patients ; yet, as had been demonstrated to-day, a great deal could be done for them. The complete recoveries were only from 15 per cent. to 20 per cent. ; yet it was possible to get all the cases of bronchiectasis sufficiently improved to allow of the patients going about and carrying on their ordinary vocations, free from the offensive odour, and from the cough and expectoration. That was a great deal to have accomplished for these patients, for then they were, economically, cured. In these patients he looked upon a recurrence of the odour in the breath as indicating the necessity for a further bronchoscopic examination, aspiration, and lavage. He was glad that Dr. Soulas had suggested this question of lavage ; he himself had been called to account on a number of occasions for putting fluid into the lung ; but it was not possible to aspirate the lower bronchi where the pus was thick and tenacious without some lavage to moisten the pus before aspirating it. Many cases of bronchiectasis had a constriction above the dilatation, and the object was so to dilate that constriction that the cavity could be opened, and the patient enabled to carry out postural coughing daily.

H. V. FORSTER said that in his earlier experience in œsophagoscopy, he had not found Brünings' tubes difficult to pass through the entrance to the œsophagus but, later, using the wider proximally lighted tubes of Mosher it had been necessary to hesitate in the deep pharynx and use the pyriform fossae as the normal and desirable ports of entry into the gullet as emphasized by Jackson and Tilley. Haslinger's latest œsophagoscopes were obviously designed to make this manœuvre easy, though by their design sacrificing some diameter of their lumen, and now he would be encouraged to try them without an anaesthetic for exploratory œsophagoscopy.

S. BÉLINOFF (in reply) : We distinguish two kinds of œsophagoscopy—the exploratory and the therapeutic. The first must be performed in every case in which we suspect a disorder of the œsophagus. The second is not within the scope of my present paper.

The technique is not so difficult as it seems in the textbook. The description of the many landmarks, and the inevitable dangers in connection with the œsophagoscopy throws the reader in such a fear that even an experienced specialist is afraid to perform the examination. The endoscopist need remember only the following rule : The line of the mouth and the line of the œsophagus form an

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angle, which can be straightened by lowering the patient's head. The introduction of the instrument is performed synchronously and in harmony with the lowering of the head. The instrument should pass into the œsophagus just at the moment when the mouth and the œsophagus form a straight line. This moment lasts only a few seconds.

This procedure is performed just as well by my assistant as by myself. The psychic condition both of the patient and of the surgeon is generally very important. In Vienna and Paris the preparation for œsophagoscopy is made just as elaborately as that for a laparotomy. The patient gets scared, the surgeon is nervous, and unwillingly transmits his excitement to his patient. It is evident, therefore, what a great advantage our simplified œsophagoscopy presents.

CASES

Lichen Planus involving the Mouth.

—A. LOWNDES YATES.

B.L., female, aged 41.

First seen *October 25th*, 1933, on account of sinusitis, and attended irregularly for minor occurrences. In the last week in *May*, 1936, tingling on the tip of the tongue began, and ulcers formed on the tongue in June. She presented herself for treatment on *October 21st*, 1936, when deep ulcers were visible on the lips, tongue, cheeks, and fauces, and a rash was present on her arms. Biopsy of the tissue of the floor of one of the ulcers showed chronic inflammation, but no evidence of Vincent's angina or tuberculosis. Blood-count normal.

The patient was seen by Dr. H. W. Barber (Dermatologist to Guy's Hospital), who reports :

" I believe that the condition is lichen planus. I have long been convinced that occasional bullae in the mouth are not uncommon in lichen planus, but I have never seen a case in which they were so numerous or so severe as in this one."

Perforation of Aorta by swallowed Foreign Body : Two specimens.—E. WATSON-WILLIAMS.

I.—Male aged 46 was admitted to the Bristol Royal Infirmary on *June 8th*, 1936. Four days previously he had swallowed a piece of chop, which had stuck in his throat ; since then he had been unable to swallow any solids, and even fluids caused pain, especially just above the tip of the sternum. He felt very weak, and during the last twenty-four hours had a stabbing pain between the shoulder-blades. Temperature 100° F. ; tongue furred ; larynx normal ; X-ray examination negative.

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Direct œsophagoscopy. At 19 cm. from teeth a white stinking mass 4 cm. long was seen and removed. After removal, pus welled up. At 24 cm. a sharp spicule of bone about 2·5 cm. long was seen impacted transversely in the œsophagus. The right end had penetrated the gullet, and the œsophagoscope was used to push the wall of the gullet gently away from this end; the fragment of bone was then removed easily. A perforation in the wall was seen, with pus welling out: it was enlarged with forceps, and the cavity douched with hydrogen peroxide solution. Two days later the patient was swallowing fluids easily without pain. Fourth day. From 3 p.m. onwards he complained of severe pain along left side of spine: temperature normal. At 4 p.m. he vomited 6 oz. blood; half an hour later the breathing became embarrassed; died suddenly. Autopsy: On right side of œsophagus, a healing abscess just above level of aortic arch; on left side, perforation of œsophagus into arch of aorta, about 8 mm. in diameter.

II.—L.G., female aged 59, was admitted under my care in *March*, 1935, with the story that eight days previously she had been eating rabbit and a bone had stuck in the throat. Since then she could take no solids at all; two days before admission she had coughed up a stinking mass from the throat, with some blood, and slight bleeding continued. She was kept on a fluid diet. Three days later (eleventh day) she vomited a mass of bright blood and fell back dead. At autopsy a perforation nearly 1 cm. area was found leading from the aorta into the œsophagus. There was no evidence of mediastinitis.

Suggested pathology in both cases: prick perforation of œsophagus, with infection and subsequent necrosis of aortic wall; later rupture of wall of aorta from internal pressure.

ROYAL SOCIETY OF MEDICINE—SECTION OF OTOLOGY

November 6th, 1936

President—DOUGLAS GUTHRIE, M.D.

Modern Views on Concussion of the Labyrinth

By DR. N. RH. BLEGVAD (Copenhagen)

IN order to illustrate the types of so-called "concussion of the labyrinth" I shall mention to-day, I will begin by quoting a couple of case histories.

I.—The patient is a man, aged 69. The hearing in his left ear has been very poor for the past thirty-three years—in his own opinion,

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