The Journal of Laryngology and Otology
March 1985. Vol. **99.** pp. 267–271

Remediastinoscopy

by

V. H. BALLE and P. BRETLAU (Copenhagen, Denmark)

Summary

The experiences and results of four re-mediastinoscopies are presented. All the patients had to some degree developed mediastinal fibrosis but not to a degree seriously interfering with the procedure. It is concluded that re-mediastinoscopy should be done if it can contribute to the diagnosis.

Introduction

Normally the superior mediastinum consist of loose, areolar, fatty tissue with large arteries and veins passing through. The lymph nodes in the region are the first to become affected in pulmonary disease and biopsy from these structures, as done in mediastinoscopy, is of primary importance in the assessment of resectability in bronchogenic carcinoma and in the diagnosis of other intrathoracic lesions. Owing to the loose interstitial tissue and the employment of blunt finger dissection in the superior mediastinum, mediastinoscopy performed once is usually a fairly easy and safe procedure, as opposed to a second exploration of the same region, where heavy fibrosis is considered to render re-mediastinoscopy impossible or contraindicated owing to difficulties in identifying and avoiding the large vessels (Palva, 1964; Reynders, 1971). During a one-year period in 1982 we had the opportunity among 191 mediastinoscopies to perform re-mediastinoscopy four times in suspected pulmonary malignancies.

Case Reports (Table I)

Case 1

A 57-year-old male who had a left pneumonectomy for an epidermoid carcinoma. Three months post-operatively he developed a left vocal cord paralysis and, as no other signs of recurrence had developed, a re-mediastinoscopy was undertaken seven months post-operatively to explore the upper mediastinum for possible recurrent malignancy. Excessive fibrosis was encountered, but no signs of recurrence.

Comment

The cause for the recurrent laryngeal nerve paralysis still remains uncertain, as the nerve was not harmed pre-operatively. Excessive fibrosis and secondary contractions might be a possibility. The heavy fibrosis might at least to some extent be due to the previous pneumonectomy.

Case 2

A 56-year-old female who had an inferior left lobectomy because of metastasis from cancer of the uterine cervix. Twelve months later re-mediastinoscopy was performed because of a suspected left hilar recurrence. The patient turned out to have metastases in the thoracic wall, but not in the tracheo-bronchial lymph nodes. There was moderate fibrosis in the superior mediastinum.

https://doi.org/10.1017/S0022215100096663 Published online by Cambridge University Press

TABLE I

CLINICAL AND SURGICAL FINDINGS IN FOUR PATIENTS IN WHOM RE-MEDIASTINOSCOPY WAS PERFORMED

Case	Clinical diagnosis	Re-mediastinoscopy performed	Surgical findings
1	Bronchogenic carcinoma left vocal cord paralysis	After seven months	Excessive fibrosis
2	Carcinoma of uterine cervix with metastasis to lung	After 12 months	Moderate fibrosis
3	Bronchogenic carcinoma	After three weeks	Mild fibrosis
4	Pulmonary cyst carcinoma-in-situ	After 33 months	Moderate fibrosis

Comment

Here the re-mediastinoscopy did not reveal any metastases as they were localized to the thoracic wall. The mediastinal fibrosis proved to be no great obstacle.

Case 3

Bronchoscopy had shown epidermoid carcinoma in the left main bronchus in a 61-year-old male. At mediastinoscopy an upper mediastinal tumour suspected of being a metastasis was biopsied, but histopathological examination showed thyroid tissue.

Comment

Here the access to the superior mediastinum was blocked by an intrathoracic thyroid tumour mimicking a mediastinal tumour. As this became clear the true extension of the disease was revealed. Only very little fibrosis had developed during the previous three weeks.

Case 4

A 60-year-old male who had an upper right lobectomy because of an infiltrate, which proved to be a cyst. Thirty-three months later the patient had a bronchoscopy and a re-mediastinoscopy because of hemoptysis and suspected epidermoid carcinoma cells in the sputum. The intervention revealed slight mediastinal fibrosis and anthracotic lymph nodes, and a new thoracotomy showed carcinoma-in-situ.

Comment

Two-and-a-half years had elapsed between the mediastinal interventions, but only light fibrosis was encountered in the upper mediastinum and not to an extent which seriously interfered with the procedure.

Discussion

Mediastinoscopy as introduced by Carlens (1959) is a well-established diagnostic and prognostic procedure and, by combining it with bronchoscopy and aspiration- or brush cytology, Jepsen (1966) reported a pre-operative microscopic diagnosis of bronchogenic carcinoma in 87 per cent of a total group of 325 patients. Pedersen *et al.* (1981) reported a pre-operative microscopic diagnosis of bronchogenic carcinoma in 90 per cent of the cases in a prospective series of 125 consecutive patients by combining fibreoptic bronchoscopy and brush biopsy with mediastinoscopy.

As opposed to mediastinoscopy, only few and scattered reports on re-mediastinoscopy have appeared in the literature. Palva (1964) reports on one patient on whom he did a re-mediastinoscopy three months after the initial one. He encountered excessive fibrosis, rendering the intervention rather difficult, and he does not recommend it as a frequent procedure. Reynders (1971) did a re-mediastinoscopy only four days after the original one and he too dissuades us from doing it, although he had no difficulties as fibrosis had not yet appeared. He also stresses that, after an interval of ten days, fibrosis will be so pro-

https://doi.org/10.1017/S0022215100096663 Published online by Cambridge University Press

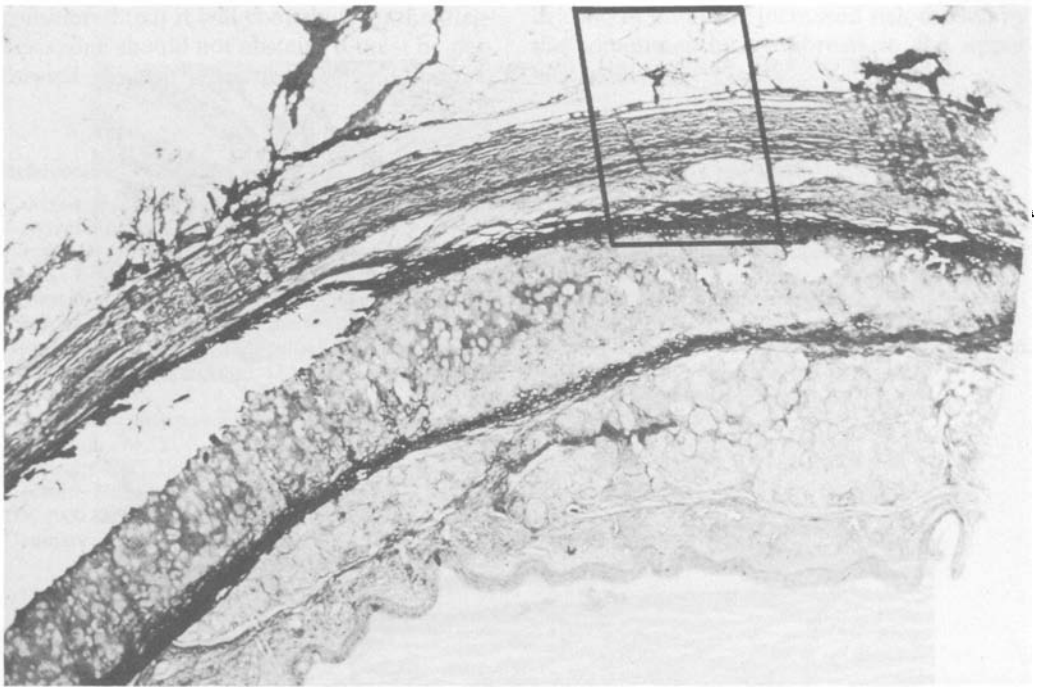


FIG. 1A

Section through upper mediastinum with severe pre-tracheal fibrosis. ×25 (van Gieson/Lillie-Weigert/Alcian stain).

nounced that the possibility of a positive finding is very slight, an observation which we have not made. Jepsen (1966) reported on three re-mediastinoscopies in his series on 556 mediastinoscopies, but he encourages us to do it whenever necessary. He stresses that it should only be performed by an experienced surgeon and endoscopist and that extreme carefulness should be exerted. He also stresses a few important points in the mediastinoscopy procedure to avoid difficulties. The incision should be on the superior margin of the bone in the suprasternal notch in order to diminish the distance from the incision to the tracheo-bronchial lymph nodes. It is very important to do the dissection digitally and behind the pretracheal fascia, to have it acting as an anatomical shield, to avoid a lesion of the large vessels and to avoid getting lost in a fibrotic upper mediastinum.

Our procedure has been performed in accordance with the above-mentioned technique. We recommend that as much digital dissection as possible be done and that, at the same time, palpation of the upper mediastinum be performed; this may yield much valuable information. After this, little instrumental dissection is needed before lymph nodes or tumour tissue can be identified. It is important to free the lymph nodes properly, not mistaking a large vein (such as the azygos) for a lymph node. If doubt still exists, aspiration from the intended biopsy spot might be helpful.

All four patients showed more or less fibrosis in the upper mediastinum (Figs. 1a and b) but, by following the above principles, the length of the procedure was never dramatically increased, and we never encountered bleeding which exceeded the average blood loss in a primary mediastinoscopy. Recovery was uneventful and no complications whatsoever occurred. In conclusion, re-mediastinoscopy is rarely indicated but, if it is

https://doi.org/10.1017/S0022215100096663 Published online by Cambridge University Press



FIG. 1B

Detail of Fig. 1a showing severe pre-tracheal fibrosis.
×100 (van Gieson/Lillie-Weigert/Alcian stain).

https://doi.org/10.1017/S0022215100096663 Published online by Cambridge University Press

considered that it will contribute to the diagnosis, one should not abstain; it must be performed by an experienced endoscopist, bearing in mind the increased risk caused by the sometimes heavy fibrosis in the upper mediastinum.

References

CARLENS, E. (1959) Mediastinoscopy: A method for inspection and tissue biopsy in the superior mediastinum. *Diseases of the Chest,* **36:** 343–352.

JEPSEN, O. (1966) *Mediastinoscopy.* Scandinavian University Books, Munksgaard, Copenhagen, 42 pp.

PALVA, T. (1964) *Mediastinoscopy.* Karger, Basel, 36 pp.

PEDERSEN, U., BALLE, V. H., and GREISEN, O. (1981) Diagnostic value of brush biopsy in suspected bronchial carcinoma with the use of the flexible fibre bronchoscope. *Clinical Otolaryngology,* **6:** 329–333.

REYNDERS, H. (1971). Difficulties and Problems in Mediastinoscopy. *Mediastinoscopy, Proceedings of an International Symposium.* Odense University, 18–20 June 1970. Odense University Press, 11 pp.

Address for correspondence:
V. H. Balle, M.D.,
University ENT Department,
Gentofte Hospital,
DK 2900 Hellerup,
Denmark.

https://doi.org/10.1017/S0022215100096663 Published online by Cambridge University Press

https://doi.org/10.1017/S0022215100096663 Published online by Cambridge University Press