

Thoracoplasty

Special Points and Complications

by

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No branch of surgery caught and held my imagination and interest as did (and still does) thoracic surgery. From the moment when, spell bound, I looked on a palpating heart and was permitted to lay a tremulous finger on the mighty aorta, during a Pneumonec-tomy, I have been an enthusiast for all things thoracic.

I was privileged to work for several years in a hospital where a good deal of thoracic surgery was done and, as the Theatre Supervisor, was able to observe at close quarters all surgery performed by the "Chest Surgery Team". Interest took me into the Thoracic Ward to follow-up and observe the nursing team take over where the theatre staff left off.

The Sister of the Fisher Ward, as it was known, was everything one could ask for in a ward sister; highly efficient, skilled in all the arts of nursing and administration and, although her ward ran with clock-like precision, it retained the calm, cheerful atmosphere so necessary for both patients and staff.

This ward was specially constructed (and I was honoured to have had some of my ideas incorporated in the plans) to accommodate 34 patients. Designed on a semi-cubicle pattern with units of two beds, four beds and eight beds, it was spacious, well ventilated and lighted, and commanded a lovely view. Each unit contained heating, a wash basin etc., while each bed had its own water suction, emergency bell and oxygen on tap.

The ward was equipped with all apparatus likely to be needed in thoracic nursing such as aspiration and blood transfusion outfits, pneumothorax apparatus, bronchoscopy apparatus etc., and the Theatre Block, Blood Bank, Laboratory and X-Ray Departments were closely linked up.

The Waipukurau Hospital (New Zealand) was justly proud of its high standard of nursing care and we were, perhaps, a little bit smug about our asepsis and techniques, but I am convinced that a low percentage of post-operative complications depends more than anything else on the skill and vigilance of the nursing profession.

The following is a brief outline of the nursing of thoracoplasty cases with emphasis on special points peculiar to these cases. General nursing care has purposely been omitted as this is too well known to need inclusion in a short article.

Thoracoplasty.

This is a plastic operation on the chest wall designed to reduce the capacity of the thorax and to permanently put a diseased lung at rest. The operation consists of the removal of a piece of certain selected ribs on the affected side, and may be carried out in stages. A preliminary phrenicotomy is often done to reduce the excursion of the diaphragm.

The operation for thoracoplasty is a major one, and the type of case for which the operation is indicated is often a poor operation risk, and, therefore most careful nursing is called for.

Indications for thoracoplasty are :

- (i) Chronic empyema where the abscess requires to be obliterated and cannot be done by expanding the lung.
- (ii) Chronic tuberculosis of the lung or bronchiectasis where there is cavitation. The obliteration of the cavity by permanent collapse of the lung will smother the disease and prevent further ulceration and haemorrhage.

Pre-operatively.

Isolation precautions may be necessary if the sputum contains koch's bacillus. The patient requires to be built up for the operation and a full nourishing diet is essential; high protein diet with milk and fresh fruits and vegetables to supply the necessary tissue-building and protecting foods.

All septic foci should be dealt with, with special reference to septic teeth and tonsils.

Psychological understanding is important as these patients are already suffering from a chronic disease and they tend to lose their courage and optimism.

Local Preparation.

The skin is shaved, both back and front of chest, from the clavicle to the level of the iliac crest and well over towards the unaffected side. After the usual skin preparation, the operation field is carefully protected by large sterile guards and kept in position by a special jacket for the purpose, or adequately bandaged using 6" flannlette bandages.

Expectoration.

The patient should empty the lung two hours, and again one hour, before operation, using the method which has proved most effectual with him; postural drainage of the lung before operation prevents the aspiration of infected secretions during operation.

Anaesthesia.

The operation may be performed under a local or general anaesthetic and pre-medication is given accordingly.

Post-Operatively.

A thoroughly warmed bed, especially in the winter, is essential as the heat loss during these operations, where a fairly extensive operation area is necessarily exposed, is great. Having recovered from the effect of the anaesthetic, the patient is gradually raised into a semi upright position and adequate protection against chilling

must be provided for the arms and shoulders.

The patient is encouraged to lie on the operated side as much as possible as this position will supply support to the weakened chest wall, increase lung compression, and aid expectoration. Weights are sometimes applied to the operated side for the same purpose.

The character and the rate of the pulse must be carefully noted as after thoracoplasty there is more or less displacement of the heart with traction on the nerves which control it. Dyspnoea may be troublesome and oxygen may be required; it should be administered nasally or with a B.L.B. mask,

Any abdominal distension should be promptly treated as it will restrict downward excursion of the diaphragm and embarrass breathing.

Expectorations.

The lung must be kept drained and the nurse can greatly aid the patient in the method of proper expectoration by urging him to take a deep breath and give a good cough, after the nurse has placed one open hand against the chest wall under the axilla of the operated side, and the other upon the good side. Just at the moment the patient coughs she aids him by compressing the chest. The amount of the sputum should be measured and recorded. Morphia is not usually ordered for these patients as it depresses the cough reflex.

Nursing Care.

The usual post-operative care is given and such complications treated as they occur.

Exercises.

The patient will have a tendency to hold his arm to his side, with the result that any movement of the arm or shoulder is painful and limited. To prevent this, exercises are started on the second day after the operation unless there are serious complications. Later the patient does carefully graded

exercises to strengthen the wasted muscles on his affected side, and to prevent scoliosis.

Possible complications.

1. *Atelectasis of the lower lobe* may be expected if paradoxical respiration and difficulty in coughing appears. Normal expansion of the lung may be established without assistance, otherwise postural drainage should be employed; bronchoscopy may be performed to aspirate secretions.

2. *Effusion of blood* or serosanguinous fluid and, occasionally, chyle, into the space of Semb. This latter occurs if the thoracic duct is damaged during operation. It may be necessary to aspirate the fluid especially if the effusion is great enough to cause dyspnoea.

The condition is serious if swelling continues to increase in size and the patient presents signs and symptoms of haemorrhage. A blood transfusion may be needed before attempting aspiration.

3. *Infection of Semb's space* may be due to either pyogenic or tubercle bacillus infection.

Pyogenic infection may be treated with instillation of penicillin,

aureomycin or gentian violet (1 in 1,000) depending on the laboratory findings. The fluid is aspirated before instillation. Tubercle infection may be treated with streptomycin and P.A.S. both locally and parenterally.

4. *Spread of the tuberculous infection* is confirmed by radiograph and treatment will be instituted without delay. A dramatic unilateral spread with disastrous results, and tuberculous meningitis, may develop.

5. *Pleural effusion and pneumothorax* may occur on the operated side due to damage during operation. Fluid should be aspirated and air removed. Spontaneous pneumothorax may follow a change in intrathoracic pressure. Air is removed by the surgeon with a blunt pneumothorax needle.

6. *Thrombosis of the Subclavian or Axillary Vein* very occasionally happens and, except for tenderness and slight oedema, needs little attention.

7. *Vagus Nerve disturbances* can be troublesome with symptoms of persistent vomiting and syncope. It is important to distinguish between the signs of syncope and haemorrhage; the former will rapidly respond to putting the patient into a recumbent position and raising the foot of the bed.

Some Observations

by

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The Basic Principles of an Anti-Tuberculosis programme should be and are, the same everywhere. But just as the prevailing conditions differ from country to country and from time to time in the same country, so also must the approach to the problem differ to suit these conditions. Therefore no plan howsoever perfect it may be, can be adopted wholly in all contexts. Emphasis on principles must vary from time to time and place to place.

Moreover an effective T. B. campaign requires a lot of money and

trained personnel, both of which, alas, are insufficient at present in this country.

If the facilities for treatment of tuberculosis were to be provided according to Western standards, the amount of money required will be so stupendous that it will be well beyond the capacity of both the Central and State Governments and the local bodies. No nation can afford to jeopardize its entire economy for the sake of any Public Health measure, howsoever important it may be. Again,