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The surgical treatment for bullous disease in emphysema has been redefined over the past decades. The indications for surgical intervention, the types of surgical procedures and the objective of the results have been questioned repeatedly. Although there is no way in vivo to recognize with certainty the type of emphysema producing bullae, the lung of the term bullous emphysema is firmly established in clinical nomenclature. The key to good results in the surgical treatment is proper selection of patients. Bullectomy for giant bulla is the method of choice.

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CASE REPORT

SURGERY FOR BULLOUS EMPHYSEMA

Jiri Simsek1, Milan Reäl2, Bohuslav Král3

Charles University in Prague, Faculty of Medicine in Hradec Králové: Department of Cardio surgery1, The Fingerland Department of Pathology2, University Teaching Hospital: Second Department of Internal Medicine2

Summary: The present indications for surgery are mainly large or giant bullae that result in compression of apparently good lung tissue, and the complications of bullous diseases such as pneumothoraces. The results of local resection of localized giant bullae are dramatic. The resection of small bullae generally has little effect on lung function. Lobectomy should not be done unless bullae have been removed locally and the remaining lung has been tested by positive ventilation. The indications for the resection of large bullae in the presence of diffuse emphysema require very careful individual study. Pulmonary function tests are mandatory but computed tomography is the single most useful method of assessing the extent of the bullous disease and the remaining lung disease. If the remaining lung isdiffusely cystic then any surgical treatment is palliative only.

CASE REPORT

A 44-year-old man was admitted to the department of Cardiosurgery in May 1995 with increasing shortness of breath. The patient’s symptoms dated back to six years ago when he had noticed the gradual onset of dyspnea on exertion. His symptoms gradually worsened to the extent that he was dyspneic at rest. The patient, non-smoker and, worked for 25 years as a mechanic in nondusty environment.

Chest roentgenogram (Fig. 1) revealed bilateral bullous emphysema with hyperlucency of left upper lung field caused by giant bulla and compression of left lower lobe.

At operation on May 4th, 1995 90 % of the upper lobe of the left lung and the lingula were found to be involved with bullae. There were also the two small bullae along the upper margin of the superior segment of the lower lobe.

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Fig. 1: Chest roentgenogram with hyperlucency of the left upper lung field caused by giant bulla and compression of left lower lobe.

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The giant bulla was excised and their base stapled and oversewn with atraumatic material. The two small bullae along the upper margin of the lower lobe were ligated. By removal of bullae the compressed lung tissue was allowed to expand. The postoperative course was uneventful and air leaks stopped in 2 days.

**Morphological findings**

Grossly, the resected pulmonary parenchyma was irregularly cystically transformed, up to 90 mm in maximal diameter and up to 1.5 mm in wall thickness. The cyst was well demarcated from the remaining pulmonary tissue (40x15x10 mm) and contained air and a small amount of fluid. No abnormal bronchi or systemic arteries supplied the lesion (Fig. 2). Histopathologically, the wall of the lesion was formed of partly hyalinized collagen covered by cuboidal cells on mesothelial surface. These cells stained positively for cytokeratin. The opposite wall surface was lined by flattened cytotkeratin negative elements. Scattered foci of chronic inflammation together with bundles of smooth muscle were found in the wall. In spite of extensive examination, no structure of primitive mesenchyma were found in the lesion (Fig. 3).

A diagnosis of bullous emphysema was made on the basis of these findings.

Postoperative X ray film and CT (Fig. 4) showed re-expansion of the remaining lung tissue.

Results of pulmonary function testing showed: FVC 78%, FEV1 55% of predicted value. It is very important that the DLCO raised up to 83%.

Throughout the recent literature, there has been uniform agreement that a bulla must occupy more than 30% of hemithorax before surgery is advised. There are subjective and objective data suggesting that anything less than this produces little or no functional improvement after surgery. Clinical improvement occurs in almost all moderately to severely symptomatic patients with bullae occupying more than 30% of a hemithorax (2).

Extreme breathlessness in the presence of a giant bulla is the test indication for an operation. With the relief of the space-occupying lesion, the underlying lungs expand, the vasculature reopens, and the resistance in both the airways and the vessels may be sizably reduced.

For the selection of patients for surgery there is important that progressively enlarging nonfunctioning pulmonary units are detected. Bullae should be compressing a significant volume of potentially functional lung parenchyma. The best results occur in patients with localized bullous disease. Removal of a bulla eliminates the functionless unit and results in reexpansion and return to function of a significant volume of lung.

Prophylactic bullectomy in patients with asymptomatic giant bulla has not been published.

Bullecтомies are performed through a standard postero-lateral approach through the fourth and fifth intercostal space. Recently videoassisted thoracoscopic surgery has developed as an alternative to open thoracotomy. The development of surgical staplers has made this procedure easier and is now used routinely. Teflon pledget incorporated into bullecto-my staple line ensures pneumostasis postoperatively (11).

Following bullectomy pleural symphysis by poudrage, abrasion of the pleural surfaces, introduction of irritating chemicals or parietal pleurectomy were advocated.

It is important to realize that chemical or mechanical pleuritis is contraindicated unless immediately after the procedure, the parieto-pleural contact is ensured. This suggests that bronchopleural fistulae must be closed before pleurodesis is attempted, a condition that is rarely satisfied after excision of a bulla in emphysema (6). Though the same authors recommended lobectomy or even segmental resection for bullous emphysema, most of others agree that simple excision of all bullae with preservation of relatively uninvolved lung is the procedure of choice (2).

By removal of nonfunctioning bulla the compressed lung tissue is allowed to expand to increase the patient’s ventilatory reserve and thereby result in successful ventilatory support. Median sternotomy has been advocated for bilateral pulmonary operations including bilateral resections of emphysematous bullae (7). There is a number of diagnostic tests to ascertain lung tissue compression including tomograms, angiograms, lung perfusion studies and computerized tomography.

The differential diagnosis of the cystic pulmonary lesion includes bullous emphysema, placental bullous lesion (8), bronchogenic cyst, cystic adenomatoid malformation (13), cystic bronchiectasis, abscess, arteriovenous malformation, lymphangiomatosis, mesenchymal cystic hamartoma (9) or metastatic tumors.

The clinical differential diagnosis depends on the age of the patient, the number and size of cystic lesion, the content of the cyst, and character of surrounding pulmonary tissue. From this point of view, on the basis of clinical outcome and radiographic finding, the diagnosis of abscess, cystic bronchiectasis, osseous granuloma, vascular malformation, lymphangiomatosis and secondary tumor may be excluded. The remaining spectrum of pathological processes formed of bullous emphysema, placental bullous emphysema, cystic adenomatoid malformation, bronchogenic cyst and mesenchymal cystic hamartoma must be excluded morphologically. From end-diagnosis point of view there were two lesions considered morphologically in present case, i.e. bullous emphysema and very rare mesenchymal cystic hamartoma. Cystic hamartoma was excluded after extensive examination of the lesion wall because no structural of primitive mesenchyma were found.

A diagnosis of bullous emphysema was made on the basis of exclusionary principle. Fitzpatrick (4) demonstrated that in most instances it is difficult to correlate postoperative subjective findings with postoperative quantitative objective data. Goldberg (6) suggested that one evaluation seems to correlate better than do other parameters, this is the measure of the work of breathing. Bosni (1) and Gaensler (5) demonstrated that in general after bullectomy pulmonary function changes toward normal, when compared preoperative and postoperative FEV1.

Resection of larger bullae, indicated by open circles, generally caused 50% to 80% improvement. Patients who had lobectomies showed little increase in FEV1 after surgery.

Pearson and Ogilvie (12) demonstrated that any pneumat- ography shown by spirometrical data postoperatively persists for several years and then gradually returns to normal preoperative values and beyond.

**References**

1. Bosni JF, Dlim DJM, Koli R. Changes in pulmonary function after bullectomy. Am Rev Respir Dis 1967;96:97-112.

2. Connolly JF, Wilson A. The current status of surgery for bullous emphysema. Thorax 1983;35:480-7.

3. De Vries WC, Wolfe WG. The management of spontaneous pneumothorax and bullous emphysema. Clin Chest Med 1983;4:443-51.

4. Fitzpatrick MJ. Prolonged observation of patients with cor pulmonale and bullous emphysema. Surg Clin North Amer 1980;60:851-9.

5. Gaensler EA, Cugel DW, Knudson RJ, Fitzgerald MX. Surgical management of pulmonary bullae. Am Rev Respir Dis 1958;77:387-92.

6. Goldberg M. Emphysema and lung disease. In: Pearson PG. Thoracic Surgery. Churchill Livingstone, 1987.

7. Lima O, Ramos L, DiBiasi P, Judice L. Median sternotomy for bilateral resection of emphysematous bullae. RJ Thorac Cardiovasc Surg 1989;97:351-61.

8. Mark EJ, Muller KM, McChesney T, Dong-Hwan S, Honig Ch, Mrak MA. Morphological findings in emphysematous bullae. Ann Thorac Surg 1987;42:144-50.

9. Parmar JM, Hubbard WG, Mathews IR. Teflon strip pneumostasis for excision of giant emphysematous bullae. Thorax 1987;42:144-50.

10. Nakahara K, Nakaoka K, Kiyoshi O. Functional indications for bullectomy of giant bulla. Ann Thorac Surg 1983;35:480-7.

11. Parmar JM, Hubbard WG, Mathews IR. Teflon strip pneumostasis for excision of giant emphysematous bullae. Thorax 1987;42:144-50.

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14. Mark EJ, Muller KM, McChesney T, Dong-Hwan S, Honig Ch, Mrak MA. Pneumothorax in patients with the lung hamartoma. RJ Thorac Cardiovasc Surg 1989;97:351-61.

15. Mark EJ. Mesenchymal cystic hamartomas of the lung. J Thorac Dis 1981;35:125-7.

16. Nakahara K, Nakaoka K, Kiyoshi O. Functional indications for bullectomy of giant bullae. Am Rev Respir Dis 1987;96:148-50.
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Fig. 3: The wall of the lesion formed of collagen covered by cytokeratin positive cuboidal elements (arrows).

**Discussion**

A practical classification of bullous emphysema was de-fined by DeVries (3). Group I identifies emphysema with a underlying healthy lung. Group II identifies multiple bullae of the lung, also with an underlying normal lung. Group III and IV identify bullous disease in the lung in generalized emphysema and in patients with other diffuse lung disease.

Group I and II are indicated to surgical extirpation with pre-dictably good functional result. Bullectomy for giant bulla has been indicated for many reasons: a) to relieve restrictive changes in the normal lung tissue in the vicinity of the giant bulla, b) to increase both the elasticity of the remaining nor-mal lung and the diameter of the airway caliber, thus increas-ing the expiratory force, c) to increase the ventilation - perfusion ratio in the nonbullous region thereby minimizing the effect of venous admixture and d) to decrease the physi-o logical dead space that exists in the giant bulla (10).

The patient has been significantly clinically improved and doing well until this time.

Postoperative CT scan with reexpansion of the re-maining lung tissue.

Arterial blood gases breathing room air were: PaO₂ 10.5, PaCO₂ 4.3 kPa. The patient has been significantly clinically improved and doing well until this time.

**References**

1. Boushy SF, Billig DM, Koplan R. Changes in pulmonary function after bullecto-my. Am J Med 1967;43:86-92.

2. Connolly JE, Wilson A. The current status of surgery for bullous emphysema. J Thorac Cardiovasc Surg 1980;79:308-15.

3. DeVries WC, Wolfe WG. The management of spontaneous pneumothorax and doing well until this time.

4. Fitzpatrick MJ. Prolonged observation of patients with cor pulmonale and bul-lous emphysema. Clin Chest Med 1983;4:443-51.

5. Mark EJ. Mesenchymal cystic hamartoma of the lung. Hum Pathol 1995;26:74-9.

6. Goldberg M. Emphysema and bullous disease. In: Pearson FG. Thoracic Surgery. Churchill-Livingstone, 1995.

7. Lima O, Ramos L, DiBiasi P, Judice L. Median sternotomy for bilateral resecti-

8. Mark EJ, Muller KM, McChesney T, Dong-Hwan S, Honig Ch, Mrak MA. The challenge of bullous emphysema after surgical resection. Am Rev Respir Dis 1958;77:387-92.

9. Mark EJ, Muller KM, McChesney T, Dong-Hwan S, Honig Ch, Mrak MA. Prolonged observation of patients with cor pulmonale and bullous emphysema. Clin Chest Med 1983;4:443-51.

10. Fitzpatrick MJ, McChesney T. Morphological transformation of bullous emphysema. J Thorac Cardiovasc Surg 1989;97:351-61.

11. Parmar JM, Hubbard WG, Mathews HR. Teflon strip pneumostasis for excision of giant emphysematous bullae. Thorax 1987;42:144-50.
Integration in psychiatry in Olomouc

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The integration of our branch could be seen at the following three levels.
1. within psychiatry,
2. in the cooperation of psychiatry in the therapeutic strategies in other branches (psychiatry to other fields of medicine),
3. in the participation of psychiatry in the therapeutic strategies in other branches (to psychiatry).

a) Ward 32 C is an open coeducative station with 28 beds for patients suffering from neurotic and psychosomatic disorders. It is run as a therapeutic community. There are weekly plans of psychotherapeutic groups in an interpersonal dynamic mode, a cognitive behavioral treatment for depressive patients, pharmacotherapy, relaxation, and occupational and social activities with psychotherapeutic groups at this ward. There are four beds for acute cases (crisis intervention center) and twenty-four-hour telephone service (crisis center) within the framework of the ward. The development of the therapeutic strategies can be seen in the following table where the years 1992 and 1996 are compared:

| Year  | TCAs or 2nd generation antidepressants | antipsychotics and other psychotropics | SSRIs, RIMAs | no psychotherapy | number of subjects |
|-------|----------------------------------------|----------------------------------------|-------------|-----------------|-------------------|
| 1992  | 28 (45%)                               | 34 (55%)                               | 0 (0%)      | 76              |                   |
| 1996  | 15 (17%)                               | 23 (25%)                               | 10 (12%)    | 90              |                   |

*significant difference (p<0.05)

Afterwards, the occupational therapy, lunch and the afternoon group with a psychologist which is aimed at strengthening of social relations, a formulation of the life aim and perspective follow. A patient’s club where former patients meet the therapists at or outside the Department takes place once a week.

ABSTRACTS OF INTERNATIONAL SEMINAR OF AUSTRIAN, SLOVAK AND CZECH PSYCHIATRISTS HELD IN HRADEC KRÁLOVÉ IN OCTOBER 23-24th 1998

Traditional meeting of psychiatrists was held in Hradec Královo, October 23-24th 1998 (after Olomouc, Košice and Graz).
The seminar was a part of celebration of 650th anniversary of foundation of Charles University. The meeting was organized by Charles University in Prague Medical Faculty in Hradec Královo (LF UK), University Teaching Hospital in Hradec Královo (FN), Psychiatric Association of Czech Medical Association JEP, Association for Substance-Related Disorders, and Department of Psychiatry LF UK, FN.
The seminar was sponsored by Military Medical Academy JEP in Hradec Královo and Regional Association of Czech Medical Chamber in Hradec Královo.
The main topics were Affective Disorders and Substance-Related Disorders. The languages of the meeting were English, German, Slovak, and Czech.
The publication was made possible by the PFIZER.

Herbert Hanau, Ladislav Housák, Ivan Táma, editors

Department for the treatment of substance related disorders in Nechanice - results and experience

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The department for the treatment of the substance related disorders in Nechanice has successfully continued in