

## รายงานผู้ป่วยและทบทวนวรรณกรรม: ก้อนถุงน้ำจากเซลล์เยื่อบุหลอดลม ปอดในเนื้อเยื่อไทมัส

ชวลิต รุ่งนฤทัย พ.บ., มณฑา ตูลาชม พ.บ.

กลุ่มงานศัลยกรรม โรงพยาบาลสมุทรปราการ

### Case Report and Literature Review: Intrathymic Bronchogenic Cyst

Chawalit Rungraruethai, M.D., Monlada Tulachom, M.D.

Department of Surgery Service, Samut Prakan Hospital, Thailand

(E-mail: mebkong@gmail.com)

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### Abstract

Thai female patient, she was 55 years old. Underlying disease was asthma. She was admitted at Samut Prakarn Hospital, chest X-ray was examined after has got Covid-19. This examination found an abnormal chest X-ray. Consequently, this had been sent for further computer X-ray, found cystic tumor size 7.6 centimeters in an anterior to middle mediastinum part. This was provided the surgical treatment plan with a median sternotomy to remove the tumor and wedge left upper lobe lung. After the operation can be extubation and she was being treated in hospital for 5 days. From the symptoms follow up appointment after operation, found the left diaphragm was lift up, had normal general symptoms. Pathologic reported no malignancy and detected consistent with bronchogenic cyst. Finally, intrathymic bronchogenic cyst will be found on the anterior mediastinal rarely. Used pathologic report for diagnosis.

**Keywords:** Intrathymic bronchogenic cyst, Anterior mediastinum, Cystic thymoma

### บทคัดย่อ

ผู้ป่วยหญิงไทยอายุ 55 ปี โรคประจำตัวเป็นโรคหอบหืด มาพบแพทย์ที่โรงพยาบาลสมุทรปราการด้วยตรวจเอกซเรย์ปอดขณะเป็น Covid-19 พบ เอกซเรย์ปอดผิดปกติ จึงส่งเอกซเรย์คอมพิวเตอร์เพิ่มเติมพบ ก้อนถุงน้ำขนาด 7.6 เซนติเมตร บริเวณ anterior ถึง middle mediastinum จึงวางแผนการรักษาโดยการ ผ่าตัดกระดูกกลางหน้าอก (median sternotomy) นำก้อนเนื้อออกและผ่าตัดนำปอดกลีบบนซ้ายออกบางส่วน หลังผ่าตัดสามารถนำท่อช่วยหายใจออกได้หลังผ่าตัด และอยู่โรงพยาบาลนาน 5 วัน นัดติดตามอาการหลังผ่าตัด พบ กระบังลมด้านซ้ายยกขึ้น อาการแสดงทั่วไปปกติ ผลพยาธิวิทยา ไม่พบเซลล์มะเร็ง และพบเป็นเนื้อเยื่อไทมัส ร้ายแรงชนิด bronchogenic cyst โดยสรุป intrathymic bronchogenic cyst พบบริเวณ anterior mediastinal ได้ยาก การวินิจฉัยรู้ได้หลังได้ผลพยาธิ

**Keywords:** ก้อนถุงน้ำจากเซลล์เยื่อบุหลอดลม ปอดในเนื้อเยื่อไทมัส, ด้านหน้าเยื่อหุ้มหัวใจ, เนื้อเยื่ออก ถุงน้ำเยื่อต่อมไทมัส

### Introduction

Thymic tissue's position is on anterior mediastinum, on a part of mediastinum fatty tissue or probably extend up into the neck.<sup>1</sup> Bronchogenic cyst can be found 20% of the tumor on mediastinum and be found 60% of mediastinal cysts.<sup>2</sup> Bronchogenic cyst is caused by the abnormal development of bronchopulmonary foregut, this is found on the mediastinum and lung parenchyma. Histology cell's characteristic is an appearance of ciliated columnar epithelium, mostly found on posterior and middle medi-

astinum. Intrathymic bronchogenic cysts are extremely rare lesions of anterior mediastinum and in Thailand cannot found report of intrathymic bronchogenic cysts. Imagine finding by CT scan in our report was deferent from other report that cystic lesion and other's reported solid lesion.

This case report mentions the patient's symptom that indicates the incidental finding abnormal CXR, has found left upper lung haziness silhouette with heart border.

## Case presentation

A 55-year patient with underlying disease of Asthmatic, has taken bronchodilators, admitted for chest x-ray after have got Covid-19. The abnormal chest X-ray film (Figure 1), then further examined by computer x-ray (CT chest with IV contrast) found the lobulated cystic lesion with internal septations at left anterior to middle mediastinal, size 6.9x4.9x7.6 cm, no lymph node enlargement. Differential diagnosis were cystic thymoma or germ cell tumor (Figure 2).

From the record of physical checkup and laboratory result(AFP, B-hcg and LDH) are found normal. Therefore, give an advice the patient about treatment surgery by operation of median sternotomy with tumor removal with wedge LUL. Intra-op finding found lobulated cystic lesion, size 7 cm. in thymic tissue extend to left upper lung that adhere the main pulmonary artery, left pulmonary artery and cover up the left internal mammillary artery. Pathology result of cystic lesion lined by ciliated columnar epithelium (AE1/AE3 and TTF-1 positive), no malignancy detected and consistent with bronchogenic cyst.

After the operation can be removed the intubation. The patient stays in hospital for 5 days before can be discharged to go back home normally. Remove chest drain after 3 days of operation. Follow up the chest x-ray after operation, found the left diaphragm to be lift up, patient has no any exhaust, able to take a normal breath.

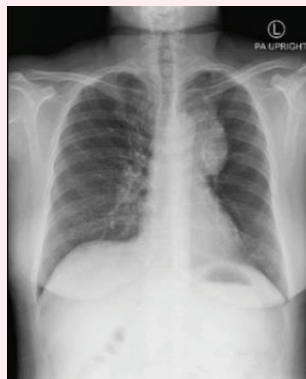


Figure 1 Appearance of Chest X-ray film

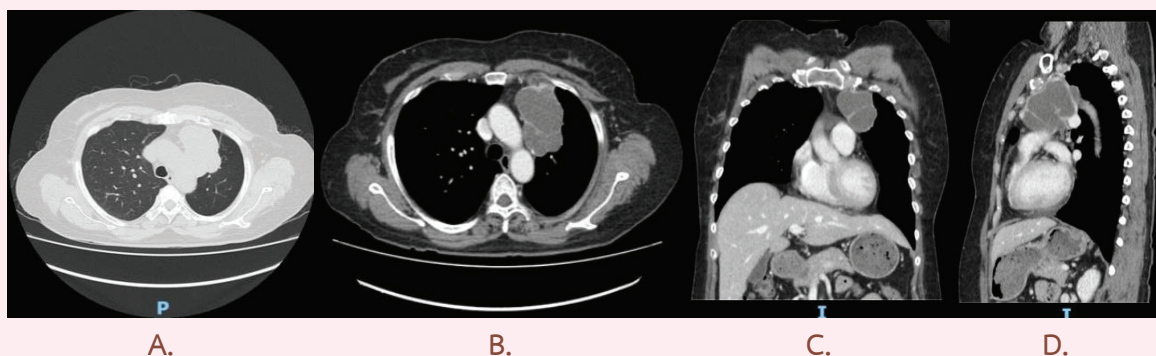


Figure 2 Appearance of Computer X-ray A. Axial view with lung window, B. Axial view with contrast, C. Coronal view, D. Sagittal view

## Discussion

Cystic lesions of mediastinum can be found 12%-18% of all mediastinal tumors,<sup>3</sup> the patient mostly has no any indication, be found accidentally or if it has an indication, tumor is mostly a large size. Anterior mediastinal cystis reported found 0.5-0.9%.<sup>4</sup> Anterior mediastinal cystic lesions can be classified as a simple cyst and complex cyst.<sup>5</sup> Anterior mediastinal tumor can be diagnosis to classify the diseases as a thymic cyst, cystic thymoma, cystic teratoma and bronchogenic cyst. Thymic cysts is found less than 0.2% of anterior mediastinal masses.<sup>6</sup> The patients found it accidentally by themselves, mostly no indication. A diagnosis picture examined result found it's an appearance of uniloculated cystic lesion. This should be a classified diagnosis separately from the thymoma with cystic components (cystic thymoma).

Cystic thymoma is caused by degenerative of thymoma is extended to become acystic formation. This found 40% of all thymoma,<sup>7</sup> but the appearance has been found frequently is a focal cystic changes in thymoma. Dyer and group has published the case report of 5 patients<sup>8</sup> those pathological found a fibrous shell with small remnant epithelial of thymoma lining surrounding or a sort of lymphocyte surrounding or with nuclear palisading. Treatment was operation.

Cystic teratoma is a benign tumor, can be found 75% of mediastinal germ cell tumors.<sup>9</sup> A half of patient found it unintentionally, no any indications, it will be indicated a symptom when become a big tumor, it is compressed or extend to nearby organs. The appearance of CT scan found the fat, fluid, soft tissue component or calcification, found the appearance of septal component or fluid joints 85%-90% of a whole tumor<sup>10</sup> treatment was operation.

Bronchogenic cyst rarely found, the first case reported by taniwaki and group<sup>11</sup> of most patients with no indication before, found it

accidently, mostly found a bronchogenic cyst in the middle or posterior mediastinum. CT scan found the appearance of cystic lesion 10%-40%.<sup>12</sup>

In other report, Rodriguez and group used CT chest and found enhancing soft tissue tumor<sup>13</sup> and Madalina Grigoriu and group used CT chest and found well defined mass with homogenous attenuation.<sup>14</sup>

In our report, CT chest showed lobulated cystic lesion that different from other report.

Diagnosis of intrathymic bronchogenic cyst are mostly examined after operation and tissue result report. Pathology reported a ciliated columnar epithelium and with inflammatory cells infiltration added.

## Conclusion

Intrathymic bronchogenic cyst on the anterior mediastinum was benign tumor rarely found, using imaging for diagnosis, found less typical cystic lesion, might be a complicated cystic or with solid component jointly. Diagnosis of anterior mediastinal tumor should be considering a bronchogenic cyst for differential diagnosis. Used pathological report after operation as an indicator.

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