(fungus ball) can also occur. This complication is associated with poor prognosis with most patients dying within 3 months of massive hemorrhage. Physicians caring for patients with bronchogenic carcinoma, especially those who are involved with endobronchial XRT, should make themselves aware of such a complication.

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Aggressive Fibromatosis of the Chest Associated With a Silicone Breast Implant*

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We report an unusual case of aggressive chest wall fibromatosis originating within the right breast of a woman with silicone implants.

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Key words: desmoid tumor; fibromatosis; silicone breast implant

Extra-abdominal fibromatosis is an uncommon soft-tissue tumor that may involve the chest wall. If the tumor primarily involves the breast, it is exceedingly rare. Although a palpable mass is often present, this tumor may first become evident as an abnormality on chest radiograph, as was the case in our patient.

CASE REPORT

A 66-year-old woman with a history of bronchitis went to her pulmonologist with the feeling of increasing dyspnea on exertion. A two-view chest radiograph was performed (Fig 1). Chest radiograph revealed an approximately 5-cm mass, possibly within the anterior segment of the right upper lobe of the lung. CT was performed and demonstrated a large mass centered within the right breast with a dumbbell-shaped protrusion into the thorax (Fig 2). The mass elevated and displaced the subglottic silicone implant.

A needle core biopsy specimen was obtained prior to surgery. Wide local excision was performed involving a radical mastectomy and resection of two ribs and accompanying intercostal muscle. Tumor measured 13 cm in length with microscopic invasion of rib periosteum and underlying skeletal muscle (Fig 3). Pathologic diagnosis was aggressive fibromatosis (chest wall desmoid tumor). Tumor was considered aggressive due to its size; the fact that it had infiltrated the periosteum of two ribs, and had bulged into the pleural space.

DISCUSSION

Fibromatosis (or desmoid tumor) is a locally invasive tumor of the connective tissue of muscle and its overlying fascia or aponeurosis.1 Desmoid tumors most commonly occur within the anterior abdominal wall in young women. Extra-abdominal sites of origin are uncommon but primarily involve the muscles of the shoulder, pelvis, and thigh. Tumors located in the chest wall and back occur in about 17% of cases reviewed at the Armed Forces Institute of Pathology.1

Most desmoids are slow-growing, palpable masses that are first noticed by patient or physician. In one series, however, 31% of chest wall tumors were first recognized on chest radiographs.2

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Female patients predominate 2:1 in cases of chest wall fibromatosis. Factors in the pathogenesis of this tumor may include antecedent trauma or surgery. Patients with Gardner's syndrome have a higher than normal incidence of desmoids and may be genetically predisposed to develop fibromatosis. Tumors centered primarily within the breast tissue may arise from the fibrous capsule that develops around silicone implants. To date, and to our knowledge, there have been only three other cases of fibromatosis of the chest seen in association with silicone breast implants.

Mammary fibromatosis is a rare condition, with fewer than 100 cases in the literature. Mammographically, small lesions present as spiculated masses and are therefore indistinguishable from breast cancer. Skin dimpling may be present in addition to a palpable mass. Fine-needle aspiration or core biopsy may not provide enough material to establish the diagnosis. Wide surgical excision is performed because it is difficult to determine the margins of the mass clinically and local recurrence occurs in 25 to 65% of cases. CT and MRI can be used to assess overall size of the mass and to document invasion.

In conclusion, we present an unusual case of aggressive fibromatosis of the breast and chest wall in a patient with silicone breast implants. Fibromatosis is an uncommon tumor that can involve the chest and can first come to clinical attention on routine chest radiographs.
**Key words:** aortic dissection; cardiac surgery; coronary artery disease; foramen ovale; hypoxemia; intraaortic shunt; right ventricular infarction

A right-to-left shunt through a foramen ovale complicating acute right ventricular infarction has been described eight times.1-8 We present two additional cases and review the literature, proposing a strategy for patient management.

**Case Reports**

**Case 1**

A 55-year-old man underwent coronary angiography because of unstable angina under treatment with nitrates and nifedipine. A 90% stenosis of the proximal left anterior descending artery and a 40% stenosis in the mid portion of the right coronary artery were found. Percutaneous transluminal coronary angioplasty (PTCA) of the left anterior descending artery led to thrombotic occlusion with severe intermittent anterior wall ischemia. The patient underwent uncomplicated emergency coronary bypass surgery. Blood gas determinations during mechanical and spontaneous ventilation were normal. Eighteen hours postoperatively, acute inferior and right ventricular infarction occurred. This was complicated by ventricular fibrillation, high-degree atrioventricular (AV) block requiring AV sequential pacing, cardiogenic shock, and arterial hypoxemia to a minimum transcutaneously measured oxygen saturation of 69% while breathing 100% oxygen.

Pulmonary arterial systolic pressure increased to 50 mm Hg and right atrial pressure rose from 13 to 30 mm Hg. The right coronary artery was successfully recanalized, after which SaO₂ saturation increased to about 90 to 92% while the patient was still breathing 100% oxygen.

Transpericardial echocardiography showed good left but poor right ventricular contraction. Contrast echocardiography showed right-to-left interatrial shunting. For the first 8 h after PTCA, right atrial pressure remained about 6 mm Hg higher than left atrial pressure, after which right atrial pressure decreased. Further dips in arterial oxygen saturation (SaO₂) to minimally 76%, temporarily related to atrial fibrillation, administration of verapamil, and positive pressure ventilation with positive end-expiratory pressure (PEEP) occurred over the next 36 h. Under isotropic support, normalization of hemodynamic parameters and oxygenation occurred over 72 h. No right-to-left shunting could be demonstrated on the 13th postoperative day.

**Case 2**

A 35-year-old woman with a history of hypertension and chronic renal failure (creatinine=2 mg/dL due to polycystic disease was hospitalized in shock and respiratory distress after she had complained of severe chest pain. A diagnosis of type A aortic dissection with severe aortic regurgitation was made, and the patient underwent urgent replacement of the ascending aorta and aortic valve by a composite graft, including a 25-mm prosthesis (St-Jude Medical). The coronary arteries were reimplanted into the graft. Postoperatively, a combination of epinephrine (Adrenalin), norepinephrine (Noradrenalin), milrinone, duchantine, and dopamine was required to maintain cardiac output and blood pressure. Oxygenation was poor and reached a nadir 4 days after the operation when the SaO₂ under a forced expiratory oxygen of 80% and 100% was 61% and 73%, respectively. Administration of PEEP was associated with deterioration of arterial oxygenation. New inferior Q waves developed on the ECG. Transesophageal echocardiography showed good left ventricular function but very poor right ventricular function. In