Octreotide in the Treatment of Chylothorax

To the Editor

We read with interest the article by Demos et al. in the March 2001 issue of CHEST. We would like to make two comments, and we would like to share our experience with octreotide administration in one of our patients suffering chylothorax.

First, significant reduction of chest drainage had already occurred after the initiation of total parenteral nutrition (TPN) and before administration of octreotide. The doxycycline infusion (with the resulting clot in the tube and the necessity of a second tube thoracotomy) may have altered the evolution of chest drainage. It is difficult to evaluate the results of treatment with octreotide, which was started 2 days after the insertion of the new tube. Additionally, the thoracentesis of 500 mL fluid on 28th day after insertion of the tube proves the existence of loculated effusion. It is possible that some amounts of chyle continued to accumulate in other, smaller loculated spaces, although the tube had stopped its drainage. This possibility creates further difficulties for interpreting the consequences of octreotide treatment. The addition of intrapleural doxycycline and its results (clots, new tube insertion, thoracentesis) complicated the evolution of drainage and the correct evaluation of octreotide administration.

Second, which treatment is more effective—somatostatin or octreotide? Successful treatment of chylothorax with somatostatin was mentioned first in 1990 and was confirmed in another report. Octreotide is a somatostatin analog and offers the advantage of subcutaneous administration, while somatostatin-14 demands continuous IV infusion.

The authors of the above-mentioned article reported that chylothorax in a 4-month-old boy had been treated successfully with octreotide. We read this article by Rimensberg et al., and we did not find any report of octreotide. Rather, Rimensberg et al. reported the administration of somatostatin as a continuous infusion.

Because of the advantage of subcutaneous administration, we decided to administer octreotide (Sandostatin; Novartis AG; Basel, Switzerland) to one of our patients with chylothorax after a left pneumonectomy. A 52-yr-old man was admitted to our hospital for squamous cell carcinoma in the left lung. He underwent left pneumonectomy with lymph node dissection. On the second day, we noticed an increased drainage of serous liquid in the chest tube (1200 mL) [Fig 1]. On the third day, the patient had a light lunch, and the liquid became milky. The biochemical examination confirmed the diagnosis of chylothorax (triglycerides, 150 mg/dL; total cholesterol, 110 mg/dL).

Cessation of oral intake and TPN started immediately. The drainage was reduced dramatically in 3 days (from 2150 mL/24 h to 350 mL/24 h) [Fig 1]. On the sixth day, the drainage was 350 mL. On the seventh day, we started subcutaneous administration of octreotide (100 μg bid for the first 2 days and 100 μg tid for the next 6 days), but there was no reduction in the amount of drainage. An aggressive treatment is suggested if chest drainage is >200 mL/24 h (as occurs in conjunction with video-assisted thoracoscopic surgery or open surgery). However, in our case, we decided to continue the conservative treatment because, although some amount of fluid is normally expected, we had faced a chylothorax after pneumonectomy where the hemithorax was completely empty. On the 15th day, we stopped octreotide administration, and on the 29th day, the chest tube was removed when drainage dropped to 250 mL. We continued the TPN for 4 days (24th day), and on the 23rd day, we started enteral nutrition by a feeding tube with a solution containing medium-chain triglycerides. Daily radiographs revealed normal evolution.
of the air-liquid level. On the 29th day, the feeding tube was removed, and the patient started oral intake. No complications occurred, and the patient was discharged the 33rd day. He has remained well for 4 months, to the time of this writing.

In our opinion, octreotide did not help our patient. Before reading the article by Demos and colleagues, we had found one other report on effective administration of octreotide (administered after thoracoscopic ligation of the thoracic duct) and one report of noneffective subcutaneous administration of octreotide.

Our case demonstrates another incidence of noneffective octreotide administration. However, Cheung et al reported on two infants who developed chylothorax after surgery for congenital heart disease and who were treated successfully with subcutaneous octreotide.

It is known that somatostatin reduces intestinal absorption of fats and intestinal blood flow and motility. Thus, administration of somatostatin, simultaneously with TPN, is a therapeutic option for treatment of chylothorax and could reduce the need for surgical intervention. However, the administration of octreotide instead of somatostatin is questionable, as there are two noneffective cases (that described in Stefanidis et al and our own case reported here) and three cases with good results.

We agree with Drs. Demos, Kozel, and Scerbo that effectiveness of octreotide cannot be proven or established by our case reports and that further confirmation is necessary to establish or reject the role of therapy in the chylothorax treatment.

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To the Editor:

First, I agree with the authors’ reservation with drawing iron-clad conclusions from our first adult case. That is the reason I welcome more application of octreotide (Sandostatin; Sandoz; East Hanover, NJ) treatment of chylothorax in adults to perhaps establish its proper place in our armamentarium.

We have used octreotide acetate in a total of five adult patients. Four patient had spontaneous chylothorax. The fifth and last patient had chylothorax on the seventh day after right lower and middle lobectomies for severe suppurating bronchiectasis with a daily milky output of 800 to 1,360 mL/d. On the second day after total parenteral nutrition and nothing orally, and octreotide, 100/mg q 8 h, the chest output, now serous, decreased to 340 mL, 150 mL, 280 mL, 280 mL, and 110 mL, respectively. The chest tubes were removed after doxycycline installation. Two more patients, one with lymphoma, responded 2 weeks and 4 days, respectively, after the initiation of octreotide treatment.

Of the five patients, one did not respond, had end-stage posthepatitic cirrhosis, and had concomitant chylous ascites and chylothorax and was treated aggressively for his liver disease. Finally, after several weeks, he recovered.

Therefore, we have had an 80% success in the treatment of chylothorax with octreotide. One more point that might be helpful is that in one patient, we had to double the dose of octreotide for 1 week to achieve arrest of the chylothorax. I hope...
these comments are helpful in encouraging more surgeons to apply and report their experiences with octreotide.

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REFERENCE


Endobronchial Sarcoidosis and Hyperreactive Airways Disease

To the Editor:

We read with interest the article by Shorr et al (September 2001),1 regarding the hyperreactive airway response (AHR) seen in the subgroup of nonsmoking patients with newly diagnosed sarcoidosis and endobronchial disease. Although the data are limited,1 (Table 1) if sarcoidosis is a given, the probability of the test (endobronchial biopsy) for diagnosing sarcoidosis approaches one if the patient has AHR with no other obvious etiology for AHR. In nonsmoking subjects who present with abnormal chest radiographic findings compatible with stage I sarcoidosis, the probability of getting an endobronchial biopsy compatible with sarcoidosis is about 50% if the patient eventually is found to have sarcoidosis.2 Presumably, if the patients in that study also had AHR, the probability of making a diagnosis of sarcoidosis would increase even further, and the best way to do it might be by endobronchial biopsy if there are no external lesions to sample and the Kveim test was not available.3,4 If more data back up the claim that AHR in newly diagnosed sarcoidosis almost always guarantees a diagnosis of endobronchial sarcoid, then AHR can be added to the diagnostic approach in making a diagnosis of lung disease in subjects with nondiagnostic symptoms and other indicators suggestive of sarcoidosis.

In patients without a diagnosis with chest radiographic findings compatible with stage I sarcoidosis and AHR with no other cause, the leading diagnosis should probably be sarcoidosis until proven otherwise,5 assuming this preliminary study is correct. In this particular case scenario, the endobronchial biopsy would be of great value. We look forward to more studies validating the findings of Shorr et al.1

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To the Editor:

We appreciate the comments of Pesola and colleagues regarding our study of airway hyperreactivity (AHR) in patients with sarcoidosis.5 In order to determine if endobronchial biopsy (EBB) should be performed during bronchoscopy for suspected sarcoidosis, they suggest that clinicians rely on the results of formal AHR testing. If AHR is present, they imply, then EBB would be useful. However, if AHR is absent, then EBB should be avoided. We disagree. First, the yield of EBB is high, irrespective of the presence or absence of AHR. As we showed in an earlier analysis5 of a diverse cohort of patients, EBB findings are positive in >60% of subjects. More importantly, the addition of EBB to transbronchial biopsy increases the diagnostic yield of bronchoscopy by 20%. Second, EBB is safe and minimally increases the length of the procedure. This point is particularly important, since a more invasive and costly intervention such as mediastinoscopy might be required if a bronchoscopy is nondiagnostic. In short, the risk–benefit ratio associated with EBB favors employing this technique routinely in cases of suspected sarcoidosis.

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The opinions expressed herein are not to be construed as official or as reflecting the policy of either the Department of the Army or the Department of Defense.

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Preoperative Bronchoscopic Biopsies and Staging

To the Editor:

We read with interest the article by Riedel et al (June 2001),1 who concluded that systematic multiple biopsies and brush and washing cytology are an accurate procedure in evaluating possible airway invasion by supraregional esophageal carcinoma. We also use biopsies in our practice,2 but we are very cautious in the interpretation because we have had a lot of negative biopsy findings in patients in whom tracheobronchial invasion was evident at bronchoscopic examination. Therefore, we do not feel confident in making a clinical choice (airway infiltrated or not, that is, operate on the patient or not) based on the results of the biopsies.

Looking in depth at the data of Riedel et al,1 (Table 2) there was