Introduction

Mediastinitis is an acute or chronic inflammatory process of the connective tissues of the mediastinum. The acute process is generally due to gram-positive cocci infections which produce purulent secretions that collect in the mediastinum. Acute mediastinitis is a rare, aggressive disease with a high mortality rate. A clear, complete description of diagnostic criteria for mediastinitis is provided by Estrella et al., and in ARCHIVOS DE BRONCONEUMOLOGÍA, González-Aragoneses et al. reported 2 cases of descending necrotizing mediastinitis originating in the oropharynx, recommending posterolateral thoracotomy for all mediastinitis cases.

The literature describes mortality rates ranging from 14% to 42%. High mortality correlates with delayed diagnosis or treatment whereas early treatment seems to reduce mortality. The present study is a retrospective review of patients who were initially diagnosed and treated for acute mediastinitis in the department of thoracic surgery of the Hospital Universitario de Salamanca, Spain, from January 1994 to March 2002.

Clinical Observation

During the study period we treated 26 cases (20 men and 6 women) for acute mediastinitis. The mean age of the patients was 55 years (range 26–85 years). In 17 cases (64%) mediastinitis originated in the esophagus; 8 (30%) occurred after resection of esophageal carcinoma and 9 (34%) were secondary to esophageal perforation. Four of the perforations were due to spontaneous rupture (Boerhaave syndrome), 4 were iatrogenic, and 1 was caused by ingestion of a foreign body (a lamb bone). In 6
cases (23%), the cause was oropharyngeal infection due
to dental or peritonsillar abscess (Figure), and 3 cases
(12%) were secondary to median sternotomy wound
infection. Mediastinitis was associated with pleural
empyema in 20 cases (76.9%) and with peritonitis in 1
case (3.5%). All diagnoses were confirmed by computed
axial tomography. In the cases with infection originating
in the esophagus, contrast-enhanced images were
obtained to locate the perforation site. Diagnosis was
reached within 12 hours in 15 cases (56.7%) and within
24 hours in 8 (30.8%). Diagnosis and, therefore, treatment
were delayed for the remaining three patients (12.5%). All
the patients underwent thoracotomy except one who was
reconstructed with an intercostal muscle or pericardial fat flap. 1 was
reconstructed with a greater pectoral muscle flap, and 1 underwent sternectomy plus intrathoracic omental
transposition. The patients required a mean 3.33 (range
2–5) surgical procedures in separate operations not
counting deferred reconstructions. Four patients (15.4%)
died: 2 in relation to esophageal disease and 2 with
descending necrotizing mediastinitis. Postoperative
complications are summarized in Table 1.

Discussion

Most authors have described an increase in the
incidence of acute mediastinitis in recent years.9–13 Such
an increase, if real, might be the result of a rising number

of procedures on the esophagus or a greater interest on
the part of authors in the diagnosis and treatment of the
problem. Some have reported a relation between early
diagnosis and treatment and lower mortality.10,13 and have
also indicated that certain nonspecific problems, such as
an initial diagnosis of pneumothorax, pneumoperitonea,
sepsis, or shock, could cause delay in reaching a full
diagnosis and treatment.10 Diagnosing acute mediastinitis
through conventional x-rays alone may delay treatment,
and if mediastinitis is suspected based on clinical signs,
computed axial tomography should be performed. Once
diagnosis is confirmed, aggressive treatment is
recommended.14 Aggressive treatment is defined as
complete mediastinal debridement with excision of
necrotic tissue, and, if necessary, insertion of multiple
mediastinal, pleural, and cervical drains. Posterolateral
thoracotomy is the approach of choice15,16 because it
allows good exposure of the mediastinal compartments.
Median sternotomy is inappropriate as it exposes the
patient to the additional risk of sternal osteomyelitis.
Sternectomy plus omental muscle flap surgery should be
reserved for cases of severe sternal osteomyelitis.17 When
mediastinitis originates in the oropharynx, trans-cervical
drainage is insufficient. Drainage guided by computed
tomography may be useful, but only in initial stages and
in some cases of post-sternotomy mediastinitis,
according to El Oakley and Wright18 and Berg et al.19 For
patients with spontaneous rupture or iatrogenic
perforation of the esophagus, the esophagus may be
sutured directly if diagnosis is early and no serious
underlying esophageal disease is present.3 In the
remaining cases with infection originating in the
esophagus, esophagectomy with gastrostomy and
jejunostomy are indicated. In cases of mediastinitis
secondary to gastroplasty or coloplasty, the
reconstruction should be removed in order to proceed
with a second reconstruction at a later time. The literature
describes an overall mortality rate ranging from 14% to

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<td>Postoperative Complications</td>
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<tr>
<td>Number of cases</td>
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<tr>
<td>Bilateral pneumonia</td>
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<td>Acute respiratory distress syndrome</td>
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<td>Hemorrhage</td>
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<td>Review and Comparison of the Literature</td>
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<tr>
<td>Estrera et al1</td>
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<td>Cherveniakov and Cherveniakov3</td>
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<td>Melero-Sancho et al4</td>
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<td>Marty-Ané et al8</td>
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<td>Papalia et al9</td>
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<tr>
<td>Weighted mean</td>
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<td>Hospital Universitario de Salamanca</td>
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42%, from which we have calculated a weighted mean of 16.6%, which is similar to the mortality rate of 15.4% in our series (Table 2). In conclusion, we strongly advise a high degree of suspicion, early diagnosis, and initiation of aggressive treatment.

REFERENCES