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# Review

# Treatment options for chylous ascites after major abdominal surgery: a systematic review



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# **KEYWORDS:**

Lymph fistula; Pancreatic surgery; Total parenteral nutrition; Medium chain triglyceride diet; Octreotide

#### Abstract

**BACKGROUND:** Chylous leakage is a relevant clinical problem after major abdominal surgery leading to an increased length of stay.

**DATA SOURCES:** A systematic search of MEDLINE/PubMed and the Cochrane Library was performed according to the PRISMA statement. The search for the MeSH terms "chylous ascites" and/ or "lymphatic fistula" retrieved a total of 2,348 articles, of which 36 full-text articles were reviewed by 2 independent investigators.

**RESULTS:** Chylous ascites is described with an incidence of up to 11%, especially after pancreatic surgery. The incidence is increasing with the number of lymph nodes harvested. In patients treated with total parenteral nutrition, conservative treatment is demonstrated to be effective in up to 100% of cases.

**CONCLUSIONS:** The extent of abdominal surgery mainly predicts the risk of chylous ascites. Conservative treatment has been shown to be effective in almost all cases and is the treatment of choice. © 2016 Elsevier Inc. All rights reserved.

Postoperative chylous ascites is a clinical issue of growing importance in abdominal surgery because of the increase in extended resections and lymph node dissections. It is commonly characterized by postoperative accumulation of chyle in the peritoneal cavity, and appearance of milky fluid and elevated triglyceride levels in the surgical drains. Direct operative trauma to the main chyle ducts, its

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branches, or lymph nodes is believed to be the major cause. Chylous ascites is known to cause prolongation of the length of hospital stay and represents a considerable economic problem, especially in oncologic surgery. Although chylous ascites is a widespread issue, evidence is limited to case series and no guidelines or general therapy recommendations exist. Therefore, we performed a systematic review of the literature to gather the existing data concerning incidence, diagnosis, treatment options, and outcome of chylous ascites after major abdominal surgery.

# Patients and Methods

# Search strategy

A systematic search of MEDLINE/PubMed and the Cochrane Library was performed according to the PRISMA

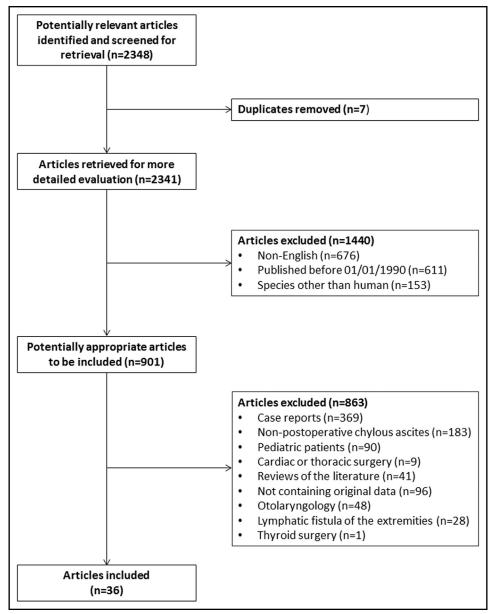


Figure 1 Flow diagram of the study selection process.

statement for reporting systematic reviews and metaanalyses.<sup>2</sup> The search terms used were "chylous ascites" and/or "lymphatic fistula." The results were examined by 2 independent investigators (M.W. and J.G.D.) for further selection. Additionally, reference lists were hand searched for relevant literature.

# Inclusion criteria

After screening and examination of the articles obtained, the articles were included for further analysis if they contained original data on incidence, diagnosis, treatment options, and outcome of postoperative chylous ascites. Literature containing original data on chylous ascites and not fitting into the above categories was also considered for analysis.

# **Exclusion** criteria

Publications were excluded if they were published before January 1, 1990, published in any other language than English, or dealt with species other than human. Furthermore, articles were excluded from analysis if they focused on non-postoperative chylous ascites, pediatric patients, cardiac or thoracic surgery, otolaryngology, thyroid surgery, or lymphatic fistulas of the extremities. Sole case reports or articles representing reviews of the literature were also excluded. Furthermore, articles solely mentioning chylous ascites or lymphatic fistula and not containing data on chylous ascites and/or lymphatic fistula were excluded as well.

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