



Clinical Update

Atrium Medical Corporation 5 Wentworth Drive, Hudson, New Hampshire 03051

Phone (603)880-1433 Fax (603)880-6718

Ambulating Patients With Chest Drainage

Of the questions that come in to the clinical hotline, most come from nurses asking about ambulating patients with chest drainage. Here are some of the most frequently asked questions and their answers.

Q. My patient has chest tubes and I want to help him walk in the hall. What should I do about suction?

A. If a patient is well enough to walk around, continuous suction on the chest drain is not essential. Suction is used to evacuate the chest quickly, and is critical when patients have large air leaks and require mechanical ventilator support. But for other patients, particularly those without air leaks, suction can be interrupted so a patient can get out of bed and stroll the unit. There are many advantages to walking, not the least of which is a significant reduction in the risk of deep venous thrombosis, so don't let a chest tube force a patient to stay in bed. Gravity drainage is perfectly acceptable while the patient is up.

Q. When I disconnect the drain from suction, what should I do with the tubing that leaves the chest drain? Should I clamp it? Should I close the stopcock?

A. When a patient's drain is disconnected from suction, the tube leaving the drain should be open to the atmosphere. This will allow any air or pressure that *might* build up in the chest drain to vent to the atmosphere. Some nurses are understandably nervous about leaving the tube open; but remember, the water seal chamber will prevent any air from entering the chest. This means you don't need to clamp the tube or close the stopcock.

Q. Uh-oh. We have routinely closed the stopcock when we disconnect patients from suction. Is that dangerous?

A. Relax. While it's not the recommended procedure, your patients aren't at any risk if the stopcock is closed. The positive pressure relief valve (PPRV), located on the top of the drain, will vent any excess pressure that may build up in the drain when the tubing leaving the drain is blocked by a closed stopcock or other tubing obstruction between the drain itself and the suction regulator. The PPRV is a safety device you can rely on.

Q. If I'm not supposed to close the stopcock when I disconnect suction, why is it there?

A. The stopcock is an ingenious feature designed to balance suction when two or more chest drains are connected to a single suction regulator with a Y-connector. Invariably when multiple drains are hooked up, the bubbling in the wet suction control chamber will be greater in one drain than the other. By slightly closing the stopcock, the bubbling will not be as vigorous or as noisy, and there will be less water evaporation from the chamber. If just one drain is attached to the suction regulator, you can control the bubbling by directly adjusting the regulator itself. It's not as simple when multiple drains are hooked up. That's where the stopcock comes in.

Q. It can be very difficult for a patient with a chest drain to walk around. Between the IV pole, the urinary catheter bag and the chest drain, there just aren't enough hands to hold everything. Is there any way to attach the chest drain to an IV pole?

A. Yes. Atrium has just introduced the Drain-Caddy™. It is a metal wire holder that easily attaches to the base of any standard IV pole. You simply place the chest drain into the holder, and go. The Drain-Caddy™ keeps the drain at an optimal position below the chest to facilitate gravity drainage and keeps tubing out of the way so a patient won't trip on it.

By following a few simple guidelines, it's easy to get patients out of bed and moving around even when they have a chest tube in place. It's a great way to get patients to take their first steps toward recovery.

Test Your Knowledge...

Q. List 3 things a nurse can do at the bedside to enhance drainage from the chest through a chest tube.

Answer on other side

In the Literature

Since many of the patients walking around with chest tubes have chronic pleural effusions, our article summarizes this month review treatment options for this condition.

Fibrinolytic Therapy for Pleural Effusion

This article, in the current issue of *Critical Care Nurse*, provides an excellent review of the pathophysiology of pleural effusions and clearly outlines the seven stages from the simplest exudative phase through the most complex empyema. The authors review the literature discussing the use of fibrinolytic therapy to resolve these chronic, complex effusions. Streptokinase and urokinase are the two agents studied.

These drugs can be expensive, but those dollars should be balanced against the cost of a lengthy hospitalization, multiple diagnostic tests and patient discomfort with long-term chest drainage. In any case, treatment with intrapleural fibrinolytics is one-third the cost of thoracotomy for decortication.

The authors point out areas for future research, particularly in nursing care areas such as pain control and proper patient positioning.

Source:

Monroe BS, Warner D: Intrapleural fibrinolytic therapy for complicated pleural effusions. *Critical Care Nurse* 1998;18(6):73-80.

Managing Pleural Effusions

This article focuses on parapneumonic effusions resulting from pneumonia. Forty percent of patients hospitalized for pneumonia will get an effusion. The risk of mortality for patients with community-acquired pneumonia and bilateral effusions is 7 times higher than for patients without effusion. This increased risk is largely attributed to delayed treatment of the complication.

Recommended treatments include antibiotic therapy for the pneumonia; most antibiotics are present in adequate levels in the pleural fluid except aminoglycosides, which penetrate purulent pleural fluid poorly. Therapeutic thoracentesis should be done when the effusion is first recognized. A second tap may be done if fluid recurs; a chest tube is indicated if pleural fluid collects a third time. The authors recommend that the pleural chest tube be left in place until the drainage is clear yellow and less than 50 ml over 24 hours.

The article goes on to discuss more treatment options, including thrombolytic therapy, thoracoscopy, thoracotomy with decortication and open drainage procedures. This is an excellent discussion of a thorny medical-surgical issue.

Source:

Light RW, Rodriguez RM: Management of parapneumonic effusions. *Clinics in Chest Medicine* 1998;19(2):373-382.

On the World Wide Web...



This issue, we show your tax dollars at work with these fact-filled government sites.

www.healthfinder.gov

This site was created by the Department of Health and Human Services in response to the general public's need for access to reliable health information on the Internet; it focuses on federal, nonprofit, and educational resources. Healthfinder® is a gateway web site that links to a broad range of consumer health and human services information resources produced by the federal government and its many partner organizations. It's a great place to start any general medical search.

www.nih.gov

This is the homepage for the National Institutes of Health. The site has a general search engine, but it's usually easier to find information if you scroll down on the homepage and click on Institutes and Offices. This will direct you to a list of the 25 separate institutes and centers that make up the NIH. Full-text patient education materials are available, as well as excellent content for health professionals.

www.cdc.gov

This is the homepage for the Centers for Disease Control and Prevention. From here, you can sign up for a free e-mail subscription to the Morbidity and Mortality Weekly Report (MMWR), or try the new feature — continuing education credits based on articles in MMWR. You can do a global search of the site, but results are often cryptic.

Test Your Knowledge...

A. To enhance drainage from the chest: Place the collection chamber as low as possible (on the floor) and raise the patient's bed to high position to maximize the pressure gradient between the chest and the drain (just like hanging an IV bag higher to speed the infusion.) Shorten the length of tubing from the chest to the drain and from the drain to the suction source. Eliminate any dependent loops in the tubing.

Best Wishes for the Holidays and a



Happy New Year.



From your friends at Atrium