

FORMATION OF SEROUS FLUID

Karabayeva Lola Khudaiberdievna

Syab Abu Ali ibn Sino Public Health Technical School, Head Teacher

Abstract

Serous fluid or serum is a type of fluid that comes out of a wound with tissue damage. It is normal for a small amount of this clear fluid to leak from your wound. However, if you notice a lot of fluid coming out of your wound or if the fluid is thick like pus, contact a healthcare professional. A large amount of serous fluid or pus coming out of a wound may indicate the presence of a bacterial infection. This article will give you the skills and knowledge about the formation of serous fluid, treatment measures.

Keywords: Serous fluid, Interstitial fluid, open wound, venous wound.

Introduction

Serous drainage is a clear to yellow fluid. The texture of serous drainage is slightly thicker than water. When you remove the bandage that covers your wound, you may see a wet outline in the gauze of your bandage.

Serous drainage is plasma without proteins. Plasma is the liquid base of blood. Plasma is over 90% water and less than 10% solids. The solids include proteins like fibrinogen, which is a protein that your liver makes to help with blood clotting.

When you get a wound and start to bleed, blood proteins stop below the surface of your skin at the wound to limit bleeding by coagulating. During coagulation, your proteins change your liquid blood into a semisolid state. This process prevents you from losing too much blood. As a result, liquid plasma (without proteins) moves to the surface of the wound while the proteins stay behind. Serous drainage is a sign that your immune system is working correctly to heal a wound. Serous drainage is normal in small amounts. Large amounts of serous drainage can be a sign of an infection, so reach out to a healthcare provider if you have a lot of wound drainage. Serous fluid simply has a lower concentration of proteins because plasma is more than 90% water. The remaining 10% or so are solids, like protein. More specifically, it's primarily made up of the proteins albumin and fibrinogen.

Albumin is created by the liver and is the most abundant protein found in plasma. Its primary role is to monitor oncotic pressure and transport molecules called ligands. Some of those transported ligands are ions, fatty acids, and bilirubin. There is even exogenous albumin, often injected intravenously. Interestingly, methotrexate and warfarin are two drugs that bind to this plasma protein. Research supports that albumin is vital to wound healing, as it provides two important amino acids: arginine and glutamine. Arginine is necessary for collagen synthesis, which promotes tissue formation and the eventual closure of the wound. Glutamine is a primary fuel source for immune cells and thus necessary for wound repair.





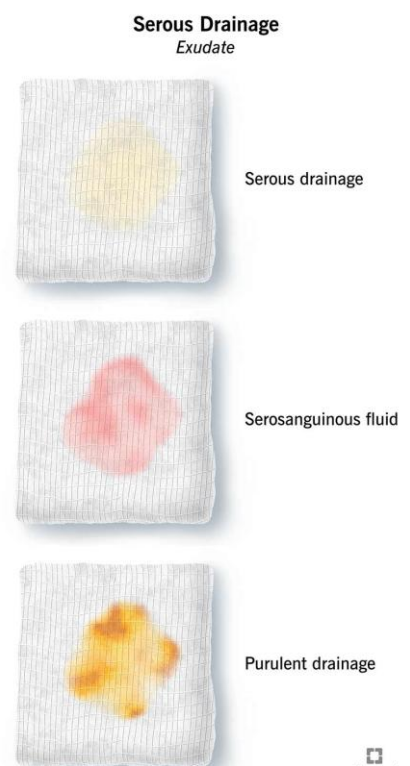
The liver produces fibrinogen, too, a protein that aids with the clotting of blood. Fibrin forms blood clots that help seal the damaged blood vessels and prevent additional blood loss, making them a key component of the first phase of wound healing: hemostasis. But fibrinogen’s role doesn’t stop there. Fibrinogen may behave as a reservoir for growth factors, direct immune system response, and even remove itself from the wound to ensure healing progress.

Serous drainage occurs when your body heals a wound. It’s important for your body to direct blood and other body fluids to the site of a wound to start the healing process. Your immune system starts the process of inflammation, which sends components of your immune system to the wound to destroy invaders like bacteria that can make you sick. The process of bringing fluids to the site of a wound causes it to have serous drainage. You may also have serous drainage if you have a significant amount of swelling beneath your skin.

There are three types of wounds that can cause serous drainage, including:

- An open sore: An open sore is the most common type of wound caused by tissue damage in your skin.
- Venous ulceration: This type of wound occurs when the veins in your legs aren’t able to push blood back up toward your heart as well as they should and your legs swell. The poor blood flow and excess swelling break down the skin barrier and can cause an ulcer.
- A partial-thickness wound: A partial-thickness wound is a break in the layers of your skin that doesn’t reach below the dermis (the second layer of your skin).

Serous drainage is a normal, clear to pale yellow, watery fluid that leaks from wounds in the early healing stages, acting as the body's way to clean and start repair by providing plasma (water, electrolytes, proteins) to the injured area. While small amounts are healthy, excessive, foul-smelling, or thick/cloudy (purulent) drainage, especially with increased redness or swelling, can signal infection or other issues, requiring a doctor's attention.



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