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Point-of-care Ultrasound for the Diagnosis of a Gluteal Abscess

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Video Link: <https://youtu.be/t9r351H-VUk>

History of present illness: A 57-year-old male with a history of intravenous drug use presented to the emergency department with four days of progressively worsening pain and swelling to his left buttock after injecting heroin subcutaneously (i.e., “skin popping”). Labs were significant for a white blood cell count (WBC) of $26.7 \times 10^3/\text{mm}^3$. Using the high frequency, linear probe, a point-of-care ultrasound (POCUS) was performed and revealed a large soft tissue abscess.

Significant findings: Point-of-care ultrasound reveals a large, hypoechoic soft tissue abscess with debris and tracks extending to the bottom of the image. Furthermore, when compressed, movement of the abscess contents is appreciated. There is also superficial cobble-stoning consistent with overlying cellulitis and soft tissue edema.

Discussion: In the United States, there are over 14 million outpatient visits per year related to soft tissue

infections, with nearly one-third being seen in the emergency department.^{1,2} 22%-65% of intravenous drug users experience abscesses and cellulitis.³ Soft tissue abscesses are commonly encountered in the emergency department and the diagnosis is often made by history and physical exam.⁵ However, imaging modalities are more accurate than physical exam alone. When comparing ultrasound to physical exam in the diagnosis of soft tissue abscesses, one study suggests that ultrasound has a sensitivity and specificity of 96% and 87%, respectively. The sensitivity and specificity of the physical exam is 84% and 60%, respectively.⁴ Another study comparing computed tomography (CT) to ultrasound in the diagnosis of abscesses found ultrasound to have a sensitivity and specificity of 96.7% and 85.7%, respectively, while the overall sensitivity and specificity of CT was 76.7% and 91.4%, respectively. Ultrasound was superior in overall image detail ratings and demonstrated more visible detail within the abscess cavity.⁵ When utilizing POCUS to evaluate for an abscess, look for an area of anechoic or hypoechoic fluid that may have contain septae, sediment, or gas. If one compresses the area with the transducer, movement or swirling of the abscess contents may be induced.

The patient in this case was given broad spectrum antibiotics and went to the operating room later that day with general surgery due to the high degree of muscular involvement and the size of the abscess cavity. Over 200 mL of purulent fluid was drained from a pocket that measured 8x14x7cm.

Topics: Abscess, ultrasound, POCUS, soft tissue, buttock.

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