

Managing Felons in the Emergency Department



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Short Communication

The management of felons is another myth that needs to be busted or at least seriously adjusted. Felons are pyogenic infections of the pulp space of the distal finger or thumb. These infections are essentially a compartment syndrome of the finger pad. However, this is not your typical compartment syndrome because the pulp of the fingertip is divided into

multiple small compartments by 15 to 20 septa that extend from the periosteum to the skin (Figure 1). The inflammatory edema that results because of the infection causes significant pain and tissue necrosis may result. Because these septa attach directly to the periosteum, osteomyelitis may develop. On the other hand, a bonafide abscess may or may not develop and a sizeable fluid collection will usually not be present.

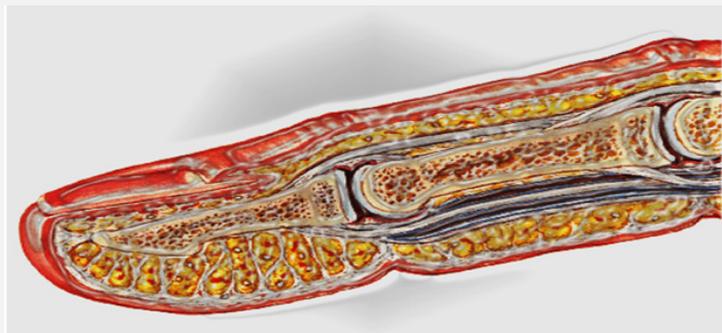
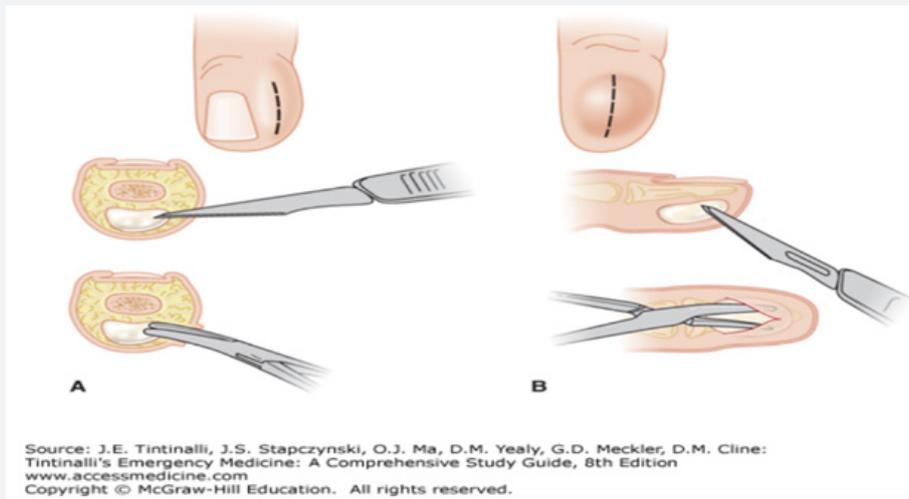


Figure 1: Multiple fingertip septa.

As demonstrated in the screenshot below, (Figure 2) treatment recommendations for felons are heavily weighted towards incision and drainage. In the past through and through, hockey stick or fish mouth incisions have been recommended. However, current recommendations seem to emphasize a less aggressive approach. For example, a unilateral longitudinal approach is recommended because it spares the sensate volar pad and is felt to achieve adequate drainage. If the felon points toward the volar fat pad, a longitudinal volar approach is recommended. After the incision is made the septa are dissected using a blunt technique and a small wick is often recommended.

Here is where the common management recommendations and I part ways. First, these recommendations are based purely on consensus and have almost no supporting evidence-based literature. The research is essentially non-existent, and these treatment recommendations come from consensus opinions

based on clinical experience [1]. Nevertheless, on the surface these recommendations would seem to make sense. If we are dealing with a compartment syndrome of the finger, why wouldn't a finger fasciotomy be the desired intervention? And, in addition to releasing pressure within the septa, one might simultaneously drain an associated abscess. But, I would argue that the fasciotomy typically done in compartment syndromes involves the release of a continuous fascia sheath surrounding a large, well defined and tightly enclosed extremity compartment with clearly identified neurovascular bundles. In the fingertip, we are dealing with 15 to 20 small compartments created by fibrous septa and a neurovascular bundle made up of very small branching nerves and blood vessels that are not easily avoided by the scalpel blade. The truth is that the highly sensory and vascular fingertip is dependent on the health of these small, branching nerves and blood vessels.



Source: J.E. Tintinalli, J.S. Stapczynski, O.J. Ma, D.M. Yealy, G.D. Meckler, D.M. Cline: Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 8th Edition www.accessmedicine.com Copyright © McGraw-Hill Education. All rights reserved.

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Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 8e, 2016

Legend:
Felon.
A. The unilateral longitudinal approach is the most frequently used method for draining felons. This approach minimizes interference with sensate areas of the finger pad.
B. If the felon is pointing toward the volar surface of the finger pad, the longitudinal volar approach may be used.

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Figure 2: Screenshot from Access Medicine demonstrating the surgical management of felons.

Additionally, finger pad stability is reportedly dependent on these septa not being seriously violated. In fact, it is for this reason that the more extensive fish mouth or hockey stick ("J") incisions are no longer recommended. The truth is that I, personally, think that most felons can be treated with antibiotics alone. And, with the easier accessibility of ultrasound machines in the emergency department we can easily determine which felons contain sufficient abscess collections needing to be drained. Using techniques to avoid near field acoustic distortion such as a water bath or large amounts of ultrasound gel we can easily determine the presence or absence of a fluid collection (Figure 3).

Once purulent fluid collections are noted a decision can be made as to whether they are large enough to deserve incision and drainage. Very small fluid collections should be left alone or aspiration with an 18-gauge needle can be attempted. Even if purulent material is not successfully aspirated, that large

needle can be redirected several times to decompress tissue spaces within the finger pad (Figure 4). Following the needle decompression maneuvers the fingertip is massaged vigorously to further decompress the finger pad. Often serosanguinous fluids will be expressed with this technique and afterwards a less indurated fingertip may be noted. If a sizable abscess is noted, a simple stab incision with the sharp tip of a number 11 blade into the abscess localized by ultrasound is recommended. Blunt dissection afterwards may be necessary but should not be extensive or prolonged.

Finally, radiographs to search for evidence of an osteomyelitis or a foreign body, digital blocks with a long acting anesthetic to control pain and appropriate antibiotics to cover MRSA infections are other important management recommendations. In summary, a kinder, gentler and less aggressive incision and drainage approach is being recommended. Well known potential complications of a felon and felon drainage include

an anesthetic fingertip, a neuroma, and an unstable finger pad. These complications can be best avoided by a more surgically restrained approach that is based on appropriately performed ultrasound examinations.



Figure 3: Ultra sounding the fingertip in a water bath to overcome near field acoustic distortion.



Figure 4: An 18-gauge needle is used to aspirate small abscesses and is redirected several times to decompress the small septal compartments in the fingertip.

References

1. Tannan SC, Deal DN (2012) Diagnosis and management of the acute felon: evidence-based review. *J Hand Surg Am* 37(12): 2603-2604.



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