Kidney Injury Following Deep Tissue Massage

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Background

Low back pain is a common pain disorder affecting Americans. In fact, complementary treatment for non-specific low back pain has increased in the United States since 1990.[1] There is emerging evidence supporting the short-term effectiveness of massage therapy for the treatment of non-specific low back pain.[2] To date, few adverse effects from massage therapy have been reported. We report a case where massage therapy resulted in kidney injury.

Case Diagnosis

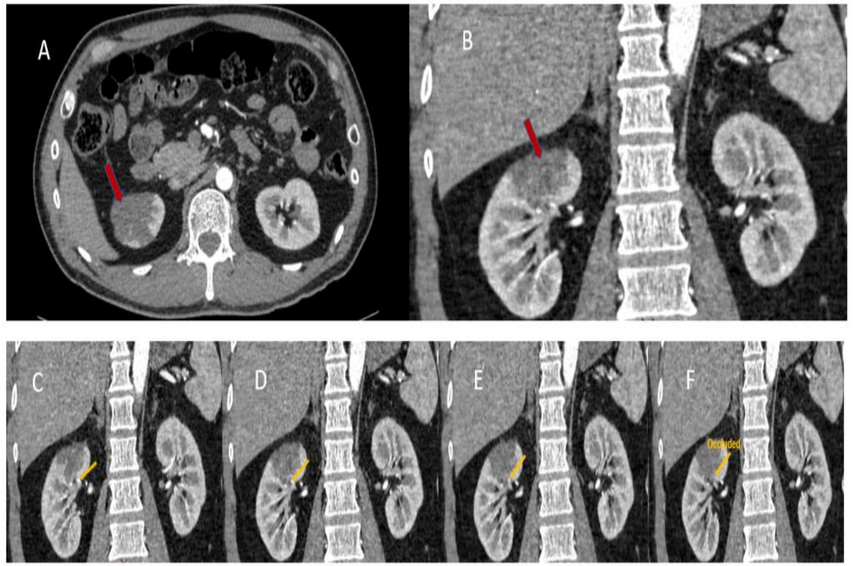
A 50-year-old male sustained a right kidney infarction after receiving deep tissue massage for low back pain.

Case Description

- 50-year-old healthy male sought massage therapy for mild low back spasm pain.
- Deep tissue massage was given to the low back area.
- Immediately after the massage, his low back pain improved significantly, but 4 hours later, he noticed intense right lower quadrant abdominal pain.
- The sensation was described as localized, deep aching pain of 6/10 intensity without radiation. Within the next two hours, pain worsened to 8/10 in intensity, prompting a visit to the emergency room for evaluation.
- He denied fever, chills, diaphoresis, nausea, vomiting, diarrhea, flank pain, dysuria, hematuria, shortness of breath, or heart palpitation.
- His physical exam showed a nondistended abdomen with localized right lower quadrant abdominal pain with palpation.
- Vitals signs, routine lab work, which included CBC, chemistry, liver, amylase, and coagulation panels were all within the normal range.
- Electrocardiogram, echocardiogram, and Holter monitoring showed no abnormality.
- Initial abdominal CT scan was normal, but triple phase contrast enhanced CT angiogram of the abdomen revealed acute kidney infarction, likely due to a thrombotic/embolic event.

Work up

Figure 1: CT angiogram of the abdomen



A,B, Triple phase contrast enhanced CT angiogram of the abdomen revealed demarcated hypoattenuation of the upper pole of the right kidney parenchyma (red arrows), consistent with segmental acute infarction. C-F Further evaluation showed flow disruption of the right superior segmental artery (yellow arrows), suggestive of a thrombotic or embolic event

Management

- Patient was treated with anticoagulation therapy with low molecular weight heparin and pain medications.
- His abdominal pain symptoms gradually resolved within 7 days.

Discussion

Massage therapy is generally safe, with few reported significant adverse effects.[3] A literature review by E. Ernest showed few reported injuries related to various types of massages to different locations of the body.[3] To date, we did not find any reported cases of renal infarction due to massage therapy in a patient with no pre-existing conditions. Renal infarction is rare and this type of injury following massage therapy is likely caused by a thromboembolic event[4]. This patient's cardiac and coagulation screens were negative, thus excluding prior underlying cardiogenic causes and coagulopathy. The proposed mechanism of injury in this case is trauma to the vessel wall caused by external forces. The location of the kidneys in proximity to the lumbar paraspinal muscles also predisposes them to injury during deep massage. The kidneys are located lateral to the vertebrae at T12 to L3, with the right kidney slightly lower than the left due to presence of the liver on the right side.[5] Posteriorly, the kidneys lie beneath the quadratus lumborum, the muscle often targeted during deep tissue massages and myofascial releases. The nature of the injury suggests that deep mechanical pressure during the massage likely resulted in dissection or injury of the segmental renal artery that supplies the upper pole[6], causing infarction.

Conclusion

Caution should be used when performing or ordering deep tissue massage therapy to the low back area as strong mechanical force could potentially damage arteries and cause kidney damage.

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