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5-2021

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# A case of succinylcholine-induced postoperative myalgia

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## INTRODUCTION

Succinylcholine is a commonly used depolarizing neuromuscular blocking agent in anesthesia for relaxation of the skeletal muscles during endotracheal intubation.

It is ideal for use in shorter surgical cases and situations where a rapid sequence intubation is warranted due to its quick onset and short duration of action.

One documented side effects of succinylcholine is postoperative myalgia, which was first described in the literature in 1952.

## CASE REPORT

An 88 y.o. male presented two days following transurethral resection of a bladder mass with complaints of diffuse myalgias that were severely limiting activity.

The pain was greatly exacerbated by any active use of the muscles and was worse in the hip and shoulder girdles.

Vital signs were normal. Labs were notable for:

- potassium 5.8
- creatinine 2.02

Initial differential was broad:

- polymyalgia rheumatica
- rhabdomyolysis
- compartment syndrome

However, CK, CRP and ESR were only mildly elevated and the diffuse nature of his pain was less consistent with these conditions.

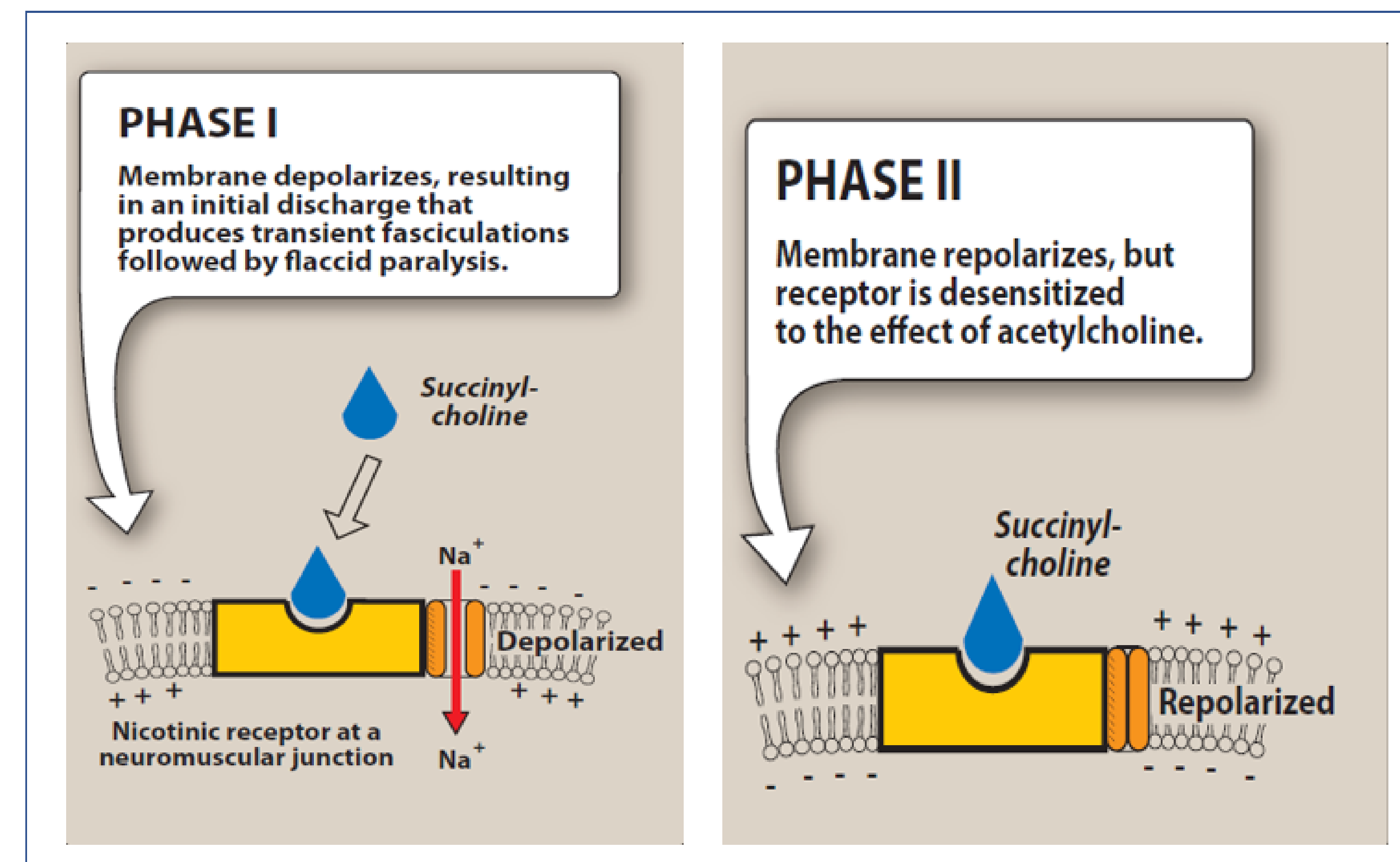
Given recent surgery, succinylcholine-induced postoperative myalgia was considered the likely culprit. The patient was managed supportively, with rapid improvement of his pain over the next few days. By hospital day 5, the myalgias had completely resolved and the patient was able to resume his regular activity.

He was subsequently discharged home in good condition.

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## MECHANISM OF SUCCINYLSCHOLINE



## DISCUSSION

Although succinylcholine-induced postoperative myalgia is generally mild and self-limited, certain cases can be severe. The incidence reportedly ranges from 1.5-89%. Oftentimes, the clinical presentation is vague and complaints are similar to those seen in rhabdomyolysis, compartment syndrome, or polymyalgia rheumatica. Characteristics of postoperative myalgia pain includes:

- pain similar to that following intense physical exertion
- presenting the day following surgery
- higher frequency in females
- less common in children as well as those over 50-60 years old
- localization primarily in the neck, shoulder, and upper abdominal muscles

The incidence and severity is lower in those who are more physically active at baseline, as well as those who ambulate earlier following surgery. Interestingly, it also appears to occur more often in those who are undergoing less invasive surgical operations. Those who present with postoperative myalgias tend to have higher potassium levels, likely related to release of intracellular potassium. CK on the other hand does not seem to correlate with the development of myalgias.

The mechanism behind postoperative myalgias is not definitively elucidated, but is thought to be related to the fasciculations that occur soon after succinylcholine is administered. These fasciculations lead to shearing forces that damage the muscle fibers, as the muscles are not contracting synchronously as a unit. Studies have shown that there does not appear to be an inflammatory component to the pain.

This case outlines the importance of considering a broad differential for common chief complaints. In patients who present with severe myalgias following surgery, intraoperative succinylcholine use is an important factor that should be investigated.

If diagnosed early, one can avoid potentially invasive and unnecessary workup for more serious causes of myalgias.