

Transient Hand Dystonia after Spinal Cord Stimulator Revision for Residual Limb Pain

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CASE DESCRIPTION

- A 60 year old female with right transfemoral amputation (FIGURE 1) presented to the pain clinic with persistent “burning” residual limb pain refractory to nerve block.
- After a successful SCS trial, patient underwent implant surgery under general anesthesia with Propofol induction. The leads were placed to the left and right of midline at the superior endplate of T8 (FIGURE 2).
- Pre-op T-spine MRI imaging showed focal right paracentral disc protrusion at T7-T8 without significant spinal canal or neural foraminal narrowing (FIGURE 3).
- Six weeks later, due to inadequate pain coverage at desired area, the leads were revised in the OR under monitored anesthesia care.
- Propofol infusion rates were titrated between 90-125mcg/kg/min for a total administration of 1034mg over the course of 2.25 hours.
- Percutaneous leads were successfully placed at the top of T8 and T9 vertebrae.
- After admission to the post-anesthesia care unit (PACU), nursing and staff noted “fixed hand clenching” despite administering two doses of intravenous diphenhydramine and fluids.
- Labs showed unremarkable electrolytes, hemoglobin, and blood gases.
- Physical exam showed intact mental status, intact cranial nerves II-XII, normal lower extremity motor exam, and normal reflexes throughout.
- Upper extremity motor exam was significant for intermittent increase in muscle tone at elbows bilaterally and hand clenching bilaterally, such that her ability to relax the muscles of the hands was not possible, quickly returning to severe flexion/contracture of the hand muscles.
- Severity lessened gradually in the PACU over four hours and completely resolved approximately eleven hours postoperatively.

FIGURE 1. SCANNOGRAM

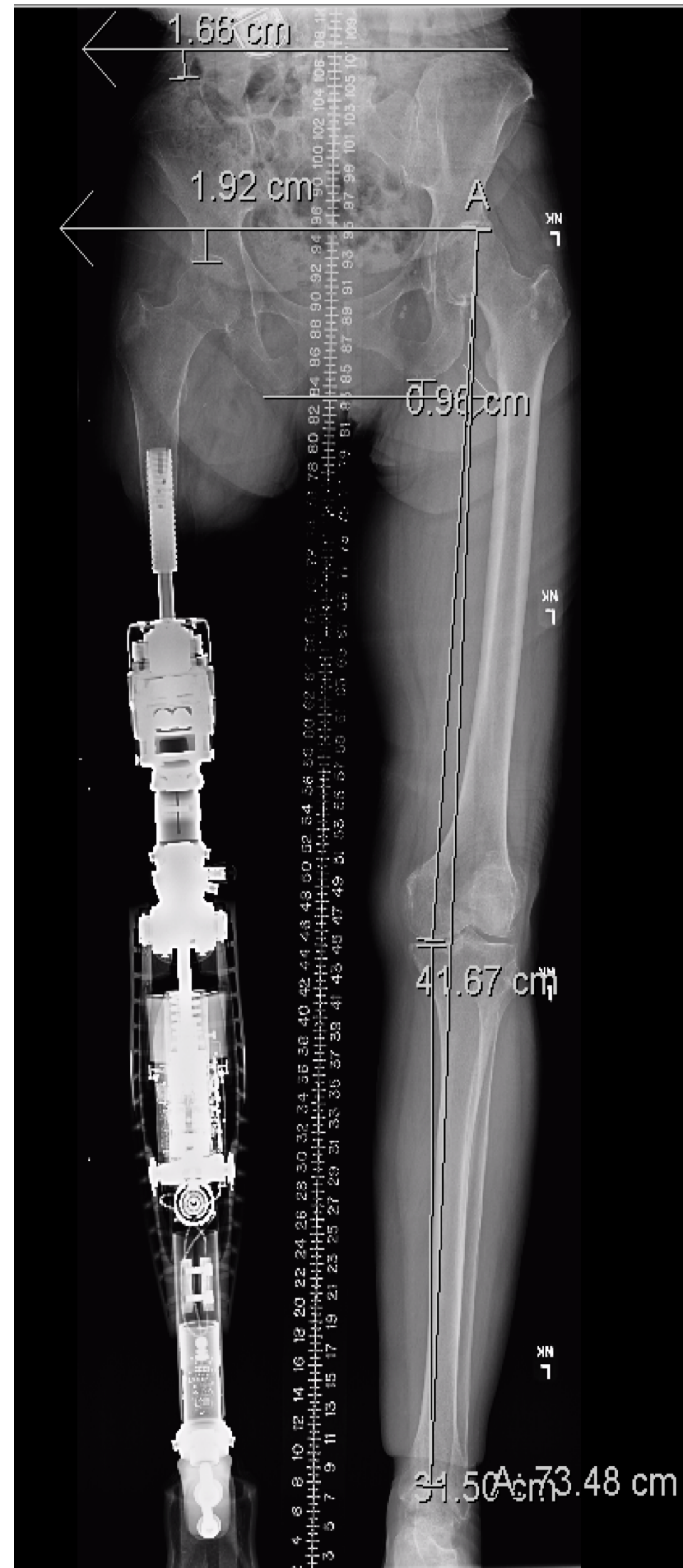


FIGURE 2. T-SPINE XR (AP)

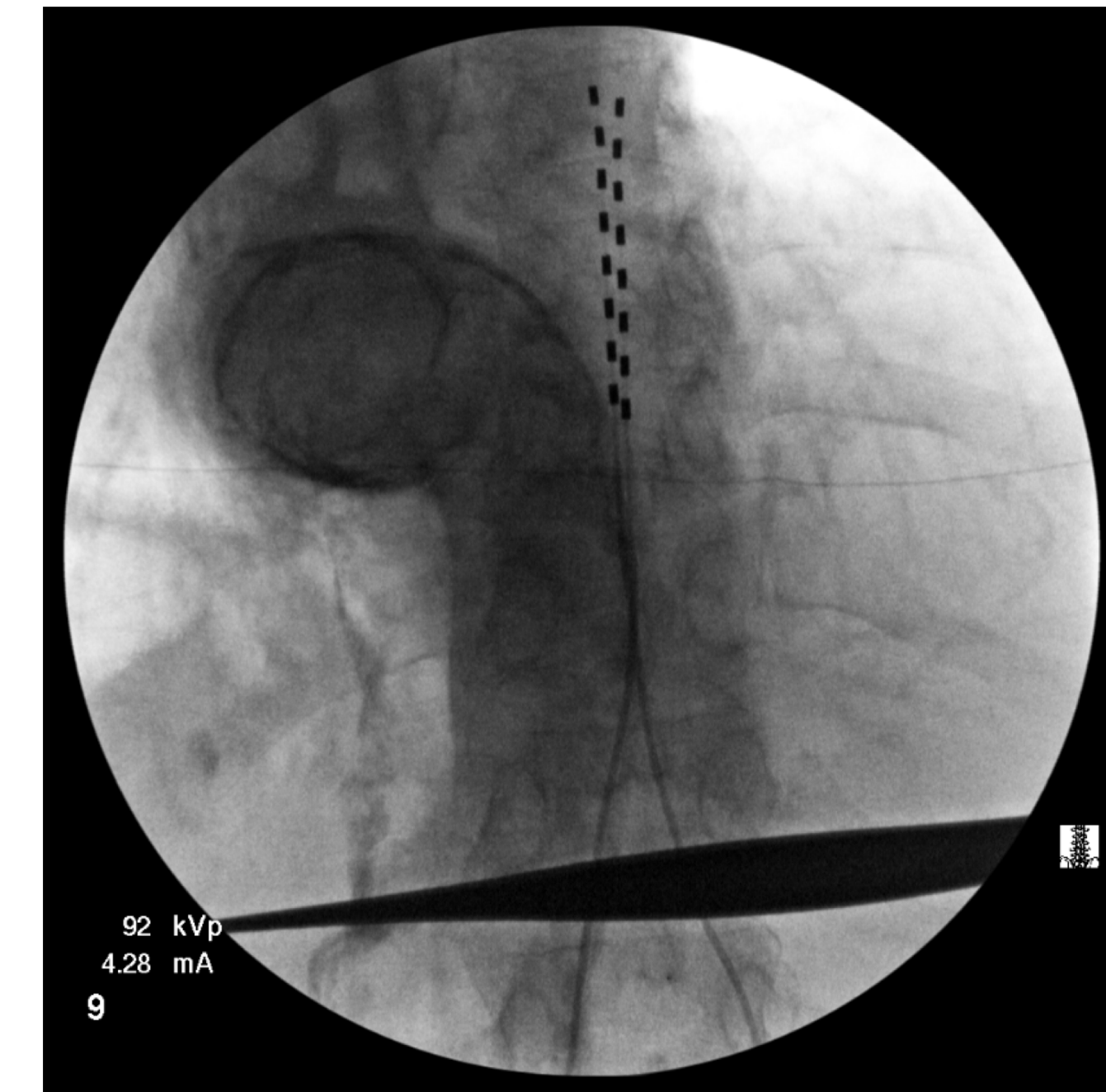


FIGURE 3. T-SPINE MRI (SAG)



DISCUSSION

- Hand dystonia is a focal dystonia characterized by excessive, involuntary muscle contractions in the hand.
- Dystonia can be constant, intermittent, or situational.
- The differential diagnosis of focal hand dystonia includes but is not limited to neuropathies, complex regional pain syndrome, focal seizures, extrapyramidal effects of medications, electrolyte abnormalities, and psychogenic movement disorder.
- Acute dystonic reactions can be caused by combined or single general anesthetic agents.
- Propofol specifically has been implicated in acute dystonic reactions. This can happen both with bolus doses as well as continuous infusions, with the proposed mechanism being an imbalance in basal ganglia transmitters that produces an increase in excitatory cholinergic output.
- Interestingly, Propofol can also be used to treat proconvulsant activity.

CONCLUSION

- Healthcare providers should be mindful of a manifestation of Propofol-induced dystonia.
- Focal hand dystonia is a clinical diagnosis and should remain in the differential for proper education and supportive treatment.

REFERENCES

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