Stones, Moans, Groans and Silicone: Severe Hypercalcemia Following Liquid Silicone Gluteal Augmentation

Derek J. Fikse DO

Eric Torkildsen MD

Alexandra Amaducci DO

Ryan M Surmaitis DO

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Derek J. Fikse, DO, Eric Torkildsen, MD, Alexandra Amaducci, DO, Ryan M. Surmaitis, DO

Lehigh Valley Health Network, Allentown, PA

Background

Cosmetic augmentation of the buttocks is a relatively common procedure and may be performed utilizing several techniques. A frequent method involves injecting liquid silicone as a permanent filler directly into the buttocks. Silicone is typically considered a benign, inert substance, however localized integumentary reactions are commonly reported adverse effects. Life-threatening silicone-induced granulomatous reactions are rare. We report a case of severe, recurrent hypercalcemia secondary to silicone-induced granulomatous disease in a female with a remote history of gluteal silicone injections.

Although silicone is typically considered a benign and inert substance, it may induce a localized granulomatous reaction. This reaction may occur years after the initial operation.

Case Report

A 39-year-old female presented to the hospital with weight loss, anorexia, weakness, nausea, and vomiting. She stated symptoms have been intermittent over the past several years. Physical examination was remarkable for cachectic appearance with a body mass index of 13 kg/m^2 as well as numerous large palpable nodules and scarring to buttocks and upper legs. She reported receiving silicone injections for buttocks augmentation twenty years earlier in the Dominican Republic. Patient reported her silicone injections had caused her similar symptoms 10 years ago and she underwent attempted surgical excision of the associated granulomas at that time. Review of symptoms demonstrated progressive abdominal pain, loss of appetite, and chronic buttock and lower extremity pain. Family reported non-specific personality changes in the patient. Labs on admission were notable for hemoglobin 8.4 g/dl, creatinine 2.1 mg/dl, calcium 17.2 mg/dl (8.5-10.1), and ionized calcium 1.89 mmol/L. The corrected calcium was 18.7 mg/dL, accounting for an albumin of 2.3 g/dL. An MRI of the pelvis was obtained and showed diffuse, extensive edema and multiple foreign body granulomas within the subcutaneous tissues of the pelvic wall/gluteal region and proximal thighs. It was determined the patient was experiencing hypercalcemia from her silicone granulomatous disease following an extensive, multi-disciplinary team evaluation that ruled out other potential etiologies. Hypercalcemia was initially treated with intravenous fluids, calcitonin, and corticosteroids. Patient elected to have surgical excision of the granulomas performed and pathology confirmed siliconomas. Upon discharge the patient's calcium was 10.8 mg/dL. Patient has had multiple subsequent admissions for continued surgical excisions, reconstruction with skin flaps, and wound infections.

Discussion

Silicone is utilized in multiple cosmetic enhancement procedures. Silicone can be introduced directly in liquid form (as in our case) or upon rupture of a silicone-filled implant. Although silicone is typically considered a benign and an inert substance, it may induce a localized granulomatous reaction. The timeframe in which this reaction occurs may be years after the initial operation. Even when silicone-granulomatous reactions occur, they are rarely associated with hypercalcemia. The mechanism of silicone-induced hypercalcemia is unknown and currently there is no consensus regarding treatment. Standard hypercalcemia treatment including intravenous hydration, calcitonin, bisphosphonates, and corticosteroids has been utilized for silicone granulomatous induced hypercalcemia. Surgical excision of the siliconomas has also been described.

Conclusion

Severe hypercalcemia secondary to silicone granulomas is a rare clinical entity and underreported in the toxicology literature. It is an important consideration when evaluating patients with cosmetic augmentations.

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