Spontaneous Parathyroid Hemorrhage in a Hemodialysis Patient

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Dear Sir,

Spontaneous parathyroid hemorrhage has been reported in a few cases of primary hyperparathyroidism due to adenoma [1] or hyperplasia [2], but to our knowledge, it has not been described in secondary hyperparathyroidism. We wish to report a woman with chronic renal failure who developed spontaneous hemorrhage of the parathyroid glands during a hemodialysis session.

Case Report

A 43-year-old woman had been on hemodialysis for 18 months because of chronic renal failure of undetermined etiology, discovered 3 years before. Throughout her stay on dialysis she was found on several occasions to be moderately hypocalcemic and hyperphosphatemic and her immunoreactive serum parathyroid hormone levels were elevated. In addition, she had increased serum alkaline phosphatase values and radiologic evidence of subperiosteal resorption in the distal phalanges of both hands. She had received aluminum hydroxide 5 g/day and 25-hydroxycholecalciferol (0.78 mg/week) for 27 months and 1,25-dihydroxycholecalciferol (0.25 µg/day) for 1 month. Her dialysis fluid contained 0.9 mmol/l of calcium and 0.75 mmol/l of magnesium; the prothrombin time was 11/11 s, platelets $200,000 \times \text{mm}^3$ and the Ivy bleeding time 4 min. During a hemodialysis session, she suddenly developed hoarseness, dysphagia, enlargement of the neck and hypercalcemia (3 mmol/l). Later on, a large hematoma appeared in the anterior chest area and over both breasts (fig. 1). Since the patient was also known to have two cold nodules in the thyroid gland (functionally euthyroid), a presumptive diagnosis of thyroid hemorrhage was made. At surgery, a large hematoma surrounding the parathyroid glands was found. The thyroid contained two foci of papillary carcinoma, but otherwise there were no areas of hemorrhage, either macroscopically or microscopically. A parathyroid gland was massively enlarged (8.7 g) and contained several areas of hemorrhagic necrosis and chief cell hyperplasia; the gland was removed. The other parathyroid gland (775 mg) with chief cell hyperplasia was removed as well.

Fig. 1. Enlargement of the neck and hematoma on chest and both breasts.

The postoperative course was benign, with transient hypocalcemia. Since then the patient has required calcitriol and her clinical course has been uneventful for 1 year.

Comment

Hemodialysis patients are prone to develop hemorrhagic complications, such as subdural hematoma or retroperitoneal hemorrhage [3]. The bleeding tendency associated with uremia is possibly responsible for them. However, we are not aware of any previous reports of spontaneous parathyroid bleeding in this setting, although it has occurred in a few cases of primary hyperparathyroidism [1, 2].

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The fact that hemorrhage is usually associated with various types of parathyroid growth could lead to the speculation that an imbalance between cell growth and blood supply favors the development of hemorrhagic foci. An additional factor in our case could have been the administration of heparin for dialysis. This interpretation is supported by the observation that bleeding appeared during a hemodialysis procedure.

Of note, papillary carcinoma of the thyroid and secondary hyperparathyroidism coincided in the same patient. This association has recently been reported in 3 additional patients [4], and various types of nonmedullary thyroid carcinoma can occur in patients with primary hyperparathyroidism [5]. The reasons for such an association are unclear at the moment.

Physicians treating patients with chronic renal failure should consider the possibility of spontaneous parathyroid hemorrhage when confronted with a patient with signs of a rapidly enlarging mass lesion in the cervical area. The appearance of hematoma in the anterior chest and breasts might be a useful diagnostic sign. Although it is difficult to draw firm conclusions from experience limited to a single case, we believe that in such cases, surgical intervention is a reasonable approach and it would be generally necessary to rule out other sources of bleeding or coexisting thyroid pathology.

References

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