

« Hungry bone syndrome » : after tertiary hyperparathyroidism treatment .

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Introduction :

Post parathyroidectomy hypocalcemia is a frequent situation, generally due to a definitive or transient hypoparathyroidism. The « Hungry bone syndrome», is a rare severe hypocalcemia etiology, the Hungry Bone Syndrome (HBS) was first described by Albright and Reifstein in 1950, in patients with hyperparathyroidism with a severe and prolonged hypocalcemia after parathyroidectomy assigned to an excessive osseous avidity, occurring in intense bone remodeling situations like fibrous osteitis or renal osteodystrophy;

Case report

We report a case of a 41 years old woman, had been undergoing chronic hemodialysis three times a week since 2008. Our patient suffered from muscles illness with functionally impotency Biologically she had a tertiary hyperparathyroidy with a calcemia at 102 mg/l and hyperphosphoremia at 56 mg/l comparing to a PTH at 1156 pg/ml with PHL up to 1114 UI /l . Cervical sonography objectived a parathyroidian adenoma about 12mm of diameter, confirmed with MIBI scintigraphy. At surgery, hyperplasia was documented and all four parathyroid glands were removed. At immediate post operative follow-up the patient presented a severe hypocalcemia getting to 1.27 nmol/l, associated to a hypophosphoremia and elevation of the alkaline phosphatasis by 4000 UI /L, by what we diagnosed a “Hungry bone syndrome” . To control calcemia, we had to administrate a consequent dose of calcium and vitamin D, reaching 8000mgr /day of calcium gluconate, and 4 µg /day of calcitriol (see table) In the 6 first days parenteral treatment supplementation was associated . None of the calciuria nether the magnesemia could be obtained because of the anuria. As we can notice in the table , we had to wait 6 month before getting normalization with decreasing of the calcium and vitamin D requirement and ordinary osseous turn over . At clinic outcomes we noticed a disappearance of the muscles illness and recovery of the motriciy. Over 8 month ,the bone density increased in lumbar by 18 % (from 0,631g/cm²to 0,747 g/cm²) , the bone density in increased in left femoral neck density increased by 14 % (from 0,768 g/cm² to 0,873 g/cm²)

Day post surgery	Daily dose calcium/calcitriol	calcemia	phosphorémia	Alkaline phosphatasis
4 day	3 gr/2 ug	51 mg/l	30 mg/l	2800 UI/l.
7 day	4 gr/4ug	62mg/l	28 mg/l	3400 UI/l.
15 day	8 gr/4 ug	70mg/l	18 mg/l	4000 UI/l.
1 month	8gr/4 ug	85 mg/l	14 mg/l	2000 UI/l.
2 month	6 gr/3 ug	85mg/l	14 mg/l	339 UI/l.
4 month	4 gr/2ug	90 mg/l	22 mg/l	169 UI/l.
6 month	2 gr/1 ug	88mg/l	30 mg/l	110 UI/l.

Table 1 : profil of calcémia and dose of calcium

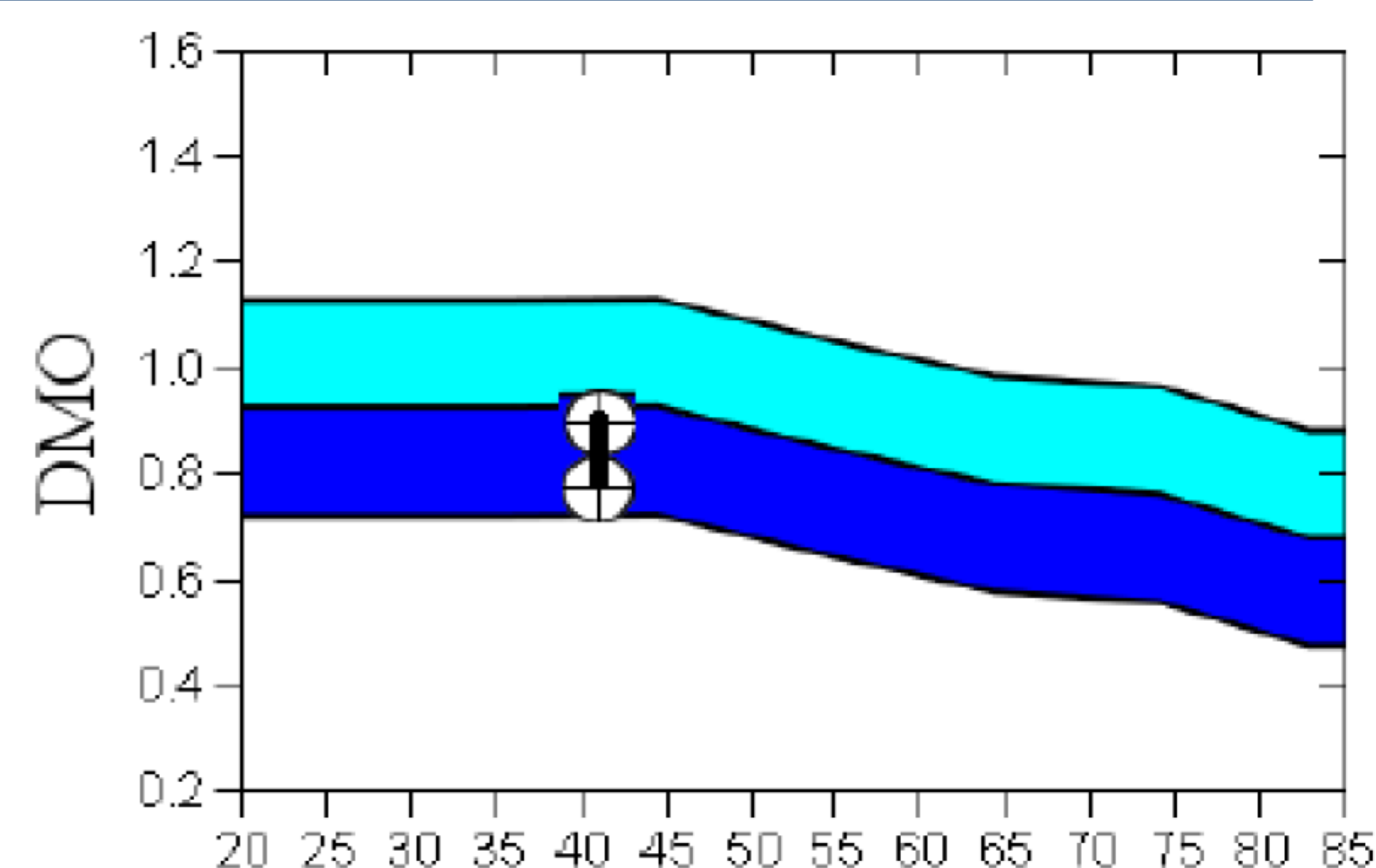


Fig 1: bone density increase in lumbar

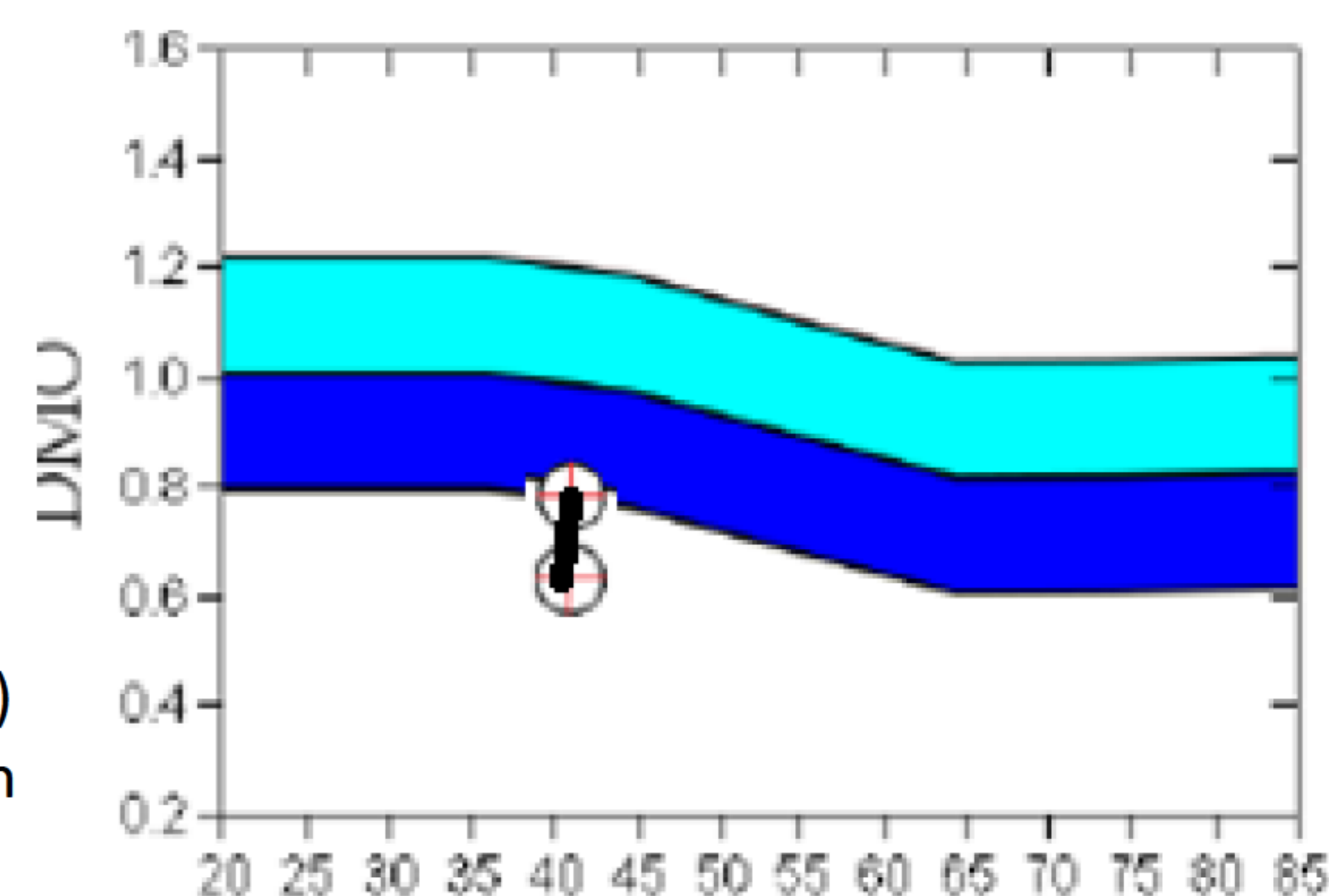


Fig 2 : bone density increased in left femoral neck

Discussion :

HBS is a relatively uncommon complication of parathyroidectomy for severe PHPT associated with preoperative high bone turnover. The term ‘hungry bone syndrome’ (HBS) has been coined to the profound (serum calcium $!2.1\text{ mmol/l}$) and prolonged (longer than 4th day post-operatively) hypocalcaemia associated with hypophosphataemia. He reported amount of calcium supplementation required to treat the severe hypocalcaemia varies between 6 and 12 g/day(2) with concomitant use of adequate doses of active metabolites of vitamin D (calcitriol) oral alfacalcidol (2–4 ug/day).

conclusion:

the « Hungry bone syndrome » , is a rare severe hypocalcemia situation, which is difficult to control ; requiring an adequate managing . The prevention of this disease could rely on a good post operative vitamin D deficit supplementation

Références :

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