

Ossification with Extensive Calcification of Uterine Leiomyoma in a Postmenopausal Woman

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ABSTRACT

Ossification in uterine leiomyomas is extremely rare. Very few cases of ossification and such extensive calcification in leiomyoma have been reported earlier in the literature. Most of the leiomyomas in uterus are known to regress after menopause. Ossification as a secondary change is generally present in the long standing leiomyomas with other degenerative changes like hyalinization and calcification. Most of these changes result from inadequate blood supply. We report a case of an incidental large leiomyoma showing extensive calcification and ossification, which is very rare, occurring in a postmenopausal woman, who died due to organophosphorus poisoning, found at autopsy. This could be an incidental finding probably because of lack of any relevant symptoms and patient's ignorance about the presence of the lesion when alive. This case is reported in view of its rarity. The pathogenesis is also discussed.

Keywords: Ossification, Calcification, Leiomyoma, Postmenopausal woman, Autopsy

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INTRODUCTION

Ossification in uterine leiomyomas is extremely rare. Various secondary changes can occur in leiomyomas including hyaline degeneration, cystic change, myxoid degeneration, infection, necrosis, calcification and very rarely ossification. Most of these changes result from inadequate blood supply resulting in replacement of muscle fibers by hyaline material, collagen, calcium, mucopolysaccharides or a combination of these.¹⁻³ Thorough search of the literature yielded very few references for ossification of leiomyomas.

CASE REPORT

Received an autopsy of a 65-year-old female with history of consumption of organophosphorus compound. She was a known hypertensive. She had succumbed to death after 2 days treatment.

On postmortem examination: All the organs were congested. We received the heart and uterus for pathological examination. Uterus measured 16 × 10 × 8 cm and weighed 752 gm. A hard and gritty globular mass was present in the myometrium which measured 12 × 8 cm (Fig. 1). Microscopic examination confirmed it to be a Leiomyoma with hyalinization and extensive calcification and ossification (Figs 2A and B). Heart weighed 365 gm. Right coronary artery, left coronary origin, left anterior descending artery and left circumflex artery

showed up to 80% narrowing of the lumen and thickening of the wall. Microscopy revealed normal myocardium and type II to V atherosclerosis of the coronaries and aorta.

It was concluded that the deceased was a known hypertensive with high-grade coronary atherosclerosis involving all the three vessels and an incidental uterine leiomyoma with extensive calcification and ossification, probably a long standing one.

DISCUSSION

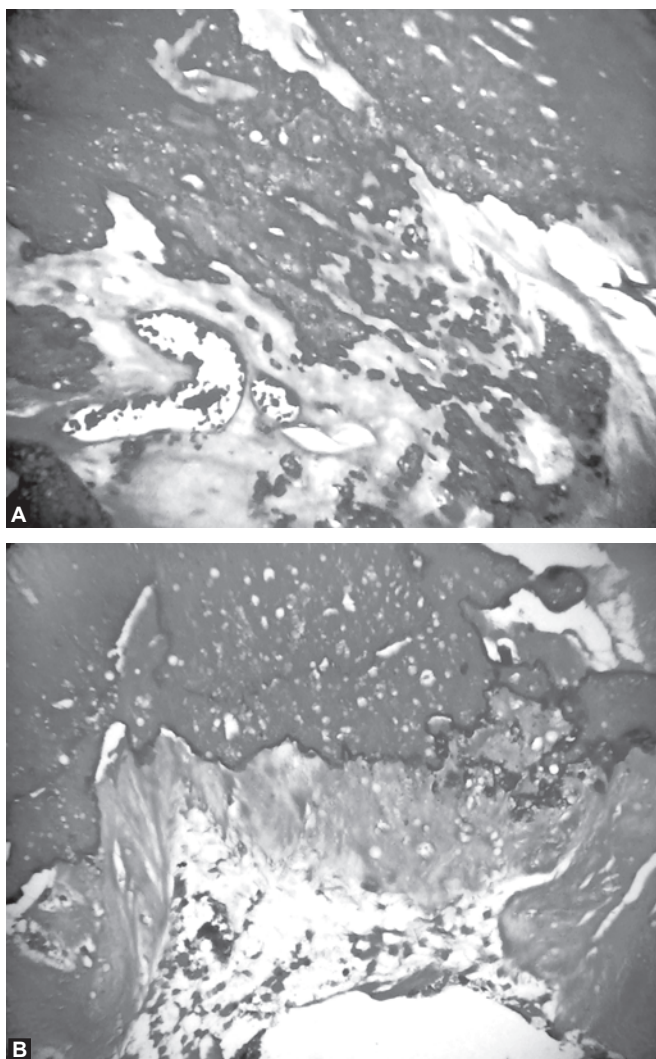
Leiomyomas are more commonly seen in later reproductive life and around the time of the menopause, commonly associated with low parity, although it is uncertain whether this is a cause or effect. The precise etiology of leiomyomas is unknown, although the majority of lesions show distinct clonal cytogenetic aberrations involving principally chromosome region~ 12q14-15, 7q and 6p;L2. As in other benign mesenchymal tumors, these often lead to rearrangement of the high mobility group (HMG) genes.⁴ The development of leiomyoma in the uterus is suspected to be influenced by hormones, especially estrogen, growth hormone and progesterone. Most of the leiomyomas are known to regress after menopause.

A variety of degenerative changes occur in leiomyomas depending on the degree and rapidity of vascular insufficiency. The types of degeneration include hyaline, myxoid, mucinous, cystic, hemorrhagic and calcification. However, ossification in leiomyoma very rarely occur.^{1,2}

Ossification in uterine leiomyoma is thought to be a heterotopic bone formation which is generally of membranous type. Frank osteoid material may be found as a sequela to an old missed abortion, ensuing upon dystrophic calcification or



Fig. 1: Intramural leiomyoma exhibiting extensive calcification and ossification



Figs 2A and B: Photomicrograph showing extensive calcification and ossification in leiomyoma (H and E; $\times 200$)

as a metaplastic phenomenon. Calcification is a process of deposition of calcium in the tissue in the form of carbonate and phosphate, while ossification is a process of differentiation of connective tissue along with presence of collagen fibers blended with mucopolysaccharides and enclosing living cells. The mere presence of calcium salt is not sufficient for inducing ossification, but presence of proliferating mesenchymal cells capable of metaplasia are equally essential.^{1,5-7}

Ossification in leiomyoma occurs very rarely. Only eight cases of ossified leiomyoma have been reported, of which two arose in the deep soft tissue.⁸ In a study conducted by Harsh Mohan et al⁹ on 900 cases of leiomyomas only five cases (0.55%) showed changes of ossification, which were associated with other degenerative changes like hyalinization and calcification indicating a gradual transformation of degeneration from one stage to another. In another study, common degenerative changes seen in leiomyoma were hyaline change (63%), myxomatous change (13%), calcification (8%), cystic (4%), fatty change (3%) and sarcomatous change (0.7%). None of the cases showed changes of ossification.² Another ossified leiomyoma was reported in a 34-year-old African-

American with sickle cell thalassemia, who presented with a painful nodule of scapular region which appeared heavily mineralized soft tissue mass on chest radiograph.⁸

Ossification as a secondary change is generally present in the long standing leiomyomas with other degenerative changes like hyalinization and calcification. The present case showed extensive calcification and ossification which is a rare occurrence and this could be an incidental finding probably because of lack of any relevant symptoms and patient's ignorance about the presence of the lesion when alive.

REFERENCES

1. Reddy DB, Rao N, Gopal Rao DV. Ossifying myoma of the fallopian tube (Report of a case). *Ind J Pathol Bact* 1967;10: 368-71(s).
2. Persaud V, Arjoon PD. Uterine leiomyoma. Incidence of degenerative change and a correlation of associated symptoms. *Obstet Gynecol* 1970;35:432-36 (s).
3. Bhattacharya N, Banerji AK, Sengupta J. Ossification of leiomyoma. *J Ind Med Asso.* 1998;96:99 (s).
4. Diagnostic histopathology of tumors Vol 1 (2nd ed). Christopher D, Fletcher M (Eds) *Tumors of myometrium.* Churchill Livingstone; 676-85.
5. Padubidri V, Daftary SN. *Shaw's textbook of Gynecology* (10th Ed). New Delhi: Churchill Livingstone Pvt Ltd 1990, 405-11(s).
6. Novak ER, Woodruff JD. *Novak's Gynecologic and Obstetric Pathology*, 7th Asian edn. Tokyo: WB Saunders Company 1974, 249-52(s).
7. Boyd W. *A textbook of Pathology. Structure and function in disease.* (8th ed). Philadelphia: Lea and Febiger 1970;1300-01 (s).
8. Xu Y, Lacouture M, Petronic Rosic V, Soltani K, Shea CR. Ossified soft tissue leiomyoma in a patient with sickle cell anaemia. *J Cutan Pathol* Nov 2005, 32(10), 696-99.
9. Mohan H, Punia R, Kumar S, Jain P Handa U. Ossification in uterine leiomyomas. *Int J Gynecol Obstet* 2003;2(1).

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