Asymptomatic Paget's Disease Of Bone In A 62-year-old Nigerian Man: **Three Years Post Alendronate Therapy.**

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Background

Paget's disease of bone is a rare endocrine disease and the detection of a case in a Nigerian man is of interest because it is about 45 years now that Bohrer reported five cases of Paget's disease in more than 20 000 Nigerians studied at the Radiology Department of the University College Hospital Ibadan. Though studies from other sub-Saharan countries still support the rarity of Paget's disease, Dahniya reported that fourteen cases of Paget's disease of bone were seen in an African community over a 4-year period (1978 to 1982) (1). During a comparable 4-year period, no case of Paget's disease was seen in a busy radiology department of a teaching hospital in Nigeria(1).

The fact that worldwide, the prevalence and the severity of Paget's disease of bone is decreasing also makes it all the more important to highlight this case. For a disease whose presentation is largely without symptoms clinicians need to exercise a high index of suspicion especially in Africa sub-region where access to quality health care delivery is still beyond the reach of the common man in order to be able to make the diagnosis of Paget's disease.

Case Presentation

A 62-year-old Nigerian man in apparent good health was found to have markedly elevated alkaline phosphatase (ALP) of 1179 U/L (reference range, 40-115U/L) (Table 1) during a routine health check in the United States, four years ago.
He had no history suggestive of Paget's disease of bone (PD) and also had no known family history of bone disease. He has no history of bone or joint pains. His general and systemic examinations were essentially normal.
Repeat ALP in our centre was 902 U/L (reference range, 40-120 U/L). Cranial CT scan (Figure 1) showed diffuse cranial vault thickening consistent with Paget's disease which was confirmed by Tc-99m HMDP scan (Figure 2). He was placed on 40 mg alendronate tablets daily for 6months.The patient has remained clinically stable and has been in continuing biochemical remission during the 3-year follow-up period. The most recent ALP result is 88 U/L (reference range, 30-132 U/L) (Table 2) in April 2015.

Discussion

This present patient highlights a case of Paget's disease of bone that came to light as result of an isolated markedly elevated serum ALP found on routine health check. Paget's disease is rare among Africans and Asians though common in people of European descent. Data regarding prevalence of Paget's disease of bone put the figure at 0.01 to 0.02% in sub-Saharan Africa. Paget's disease of bone is said to be commoner in older people thus the age of this patient at diagnosis is in keeping as well as his gender because PD is said to be commoner in men than women.

It is interesting to note that this present patient has been asymptomatic of Paget's disease; existing data suggest between 30 and 40% of patients are symptomatic. This present patient was diagnosed with Paget's disease after cranial CT and Tc-99m HMDP scan (Figure 1 and 2) confirmed the presence of pagetic bones. The current guidelines for initiating therapy in patients with Paget's disease of bone also takes into cognizance asymptomatic patients who have polyostotic disease and who have lesions in certain bones, for example the skull, vertebrae and any of the long bones (2).

He was treated with alendronate which is a potent newer generation aminobisphosphonate that has shown proven efficacy and safety in achieving continuing remission in Paget's disease (3). It is interesting to know that his ALP was 10 fold the upper limit of the normal reference range prior to treatment however, within 3 months a remarkable drop in serum ALP was achieved with oral alendronate. The decision to continue therapy for an additional 3 months is a well-informed one because serum ALP not only normalized subsequently but this patient has maintained continuing biochemical remission for more than 3 years now. Existing literatures elucidate some factors that help in inducing remissions and achieving longer duration of remissions with bisphosphonates to include pre-therapy levels of ALP and post-therapy ALP nadirs(4).

Table 1

Parameter	Result	Reference range
GLUCOSE	80	65 - 99 MG/DL
BUN	15	7 - 25 MG/DL
CREATININE	1.09	0.79 - 1.46 MG/DL
eGFR AFRICAN AMERICAN	86	> 60 ML/MIN/1.73
eGFR NON-AFRICAN AMERICAN	74	> 60 ML/MIN/1.73
CALCULATED BUN/CREAT	13.8	6 - 22 RATIO
SODIUM	140	135 - 146 MMOL/L
POTASSIUM	4.2	3.5 - 5.3 MMOL/L
CHLORIDE	104	98 - 110 MMOL/L
CARBON	22	21 - 33 MMOL/L
CALCIUM	9.6	8.6 - 10.2 MG/DL
PROTEIN, TOTAL	6.9	6.2 - 8.3 G/DL
ALBUMIN	4.4	3.6 - 5.1 G/DL
CALCULATED GLOBULIN	2.5	2.1 - 3.7 G/DL
CALCULATED A/G RATIO	1.8	1.0 - 2.1 RATIO
BILIRUBIN, TOTAL	0.6	0.2 - 1.2 MG/DL
ALKALINE PHOSPHATASE	1179	40 - 115 U/L
SGOT (AST)	28	10 - 35 U/L
SGPT (ALT)	27	9 - 60 U/L

Table 2

Parameter	Result	Reference range
GLUCOSE	77	65-100 MG/DL
BUN	13	8 - 25 MG/DL
CREATININE	1.0	0.8 - 1.4 MG/DL
eGFR AFRICAN AMERICAN	92	> 60 ML/MIN/1.73
eGFR NON-AFRICAN AMERICAN	76	> 60 ML/MIN/1.73
CALCULATED BUN/CREAT	13	6 - 28 RATIO
SODIUM	142	133 - 146 MMOL/L
POTASSIUM	4.6	3.5 - 5.3 MMOL/L
CHLORIDE	104	97 - 110 MMOL/L
CARBON	28	18 - 30 MMOL/L
CALCIUM	9.7	8.5 - 10.5 MG/DL
PROTEIN, TOTAL	7.2	6.0 - 8.4 G/DL
ALBUMIN	4.7	2.9 - 5.0 G/DL
CALCULATED GLOBULIN	2.5	2.0 - 3.8 G/DL
CALCULATED A/G RATIO	1.9	0.9 - 2.5 RATIO
BILIRUBIN, TOTAL	0.7	0.1 - 1.3 MG/DL
ALKALINE PHOSPHATASE	88	30 - 132 U/L
SGOT (AST)	27	5 - 35 U/L
SGPT (ALT)	37	7 - 56 U/L

Figure 1

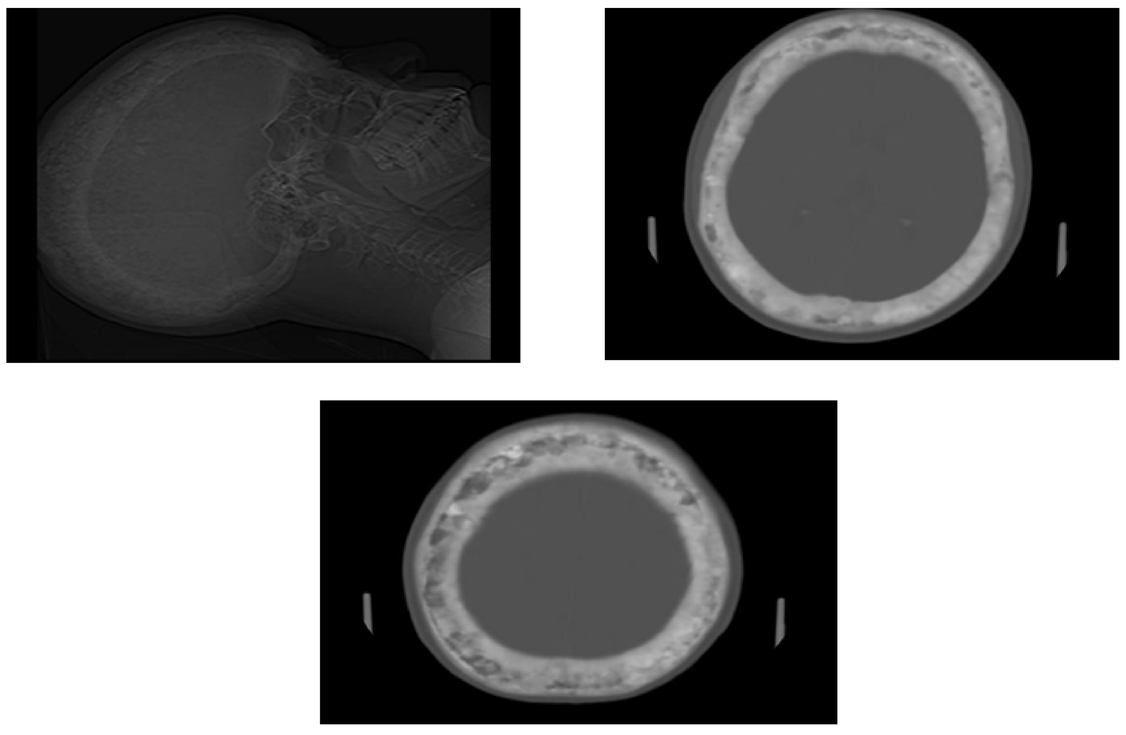
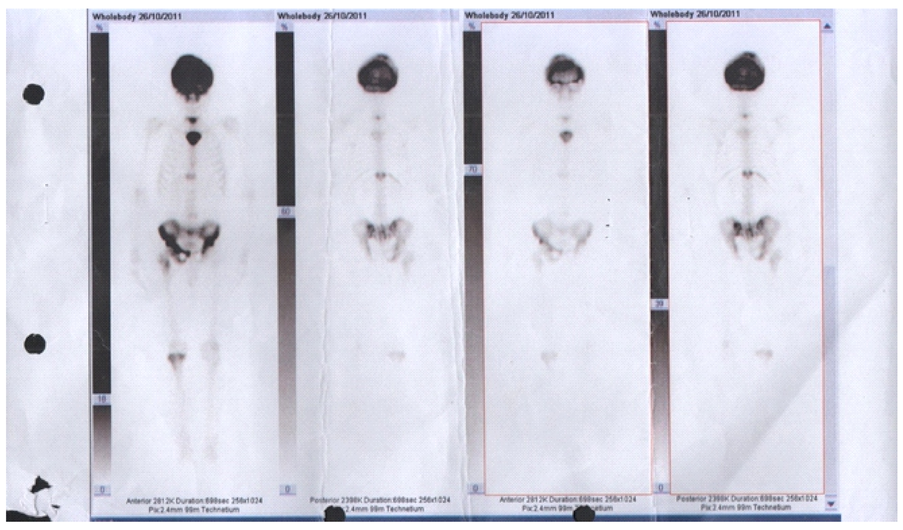


Figure 2



Conclusion and Learning Points

- Paget's disease of the bone is very rare but can occur in Africans as seen in this Nigerian man
- Most patients with Paget's disease are asymptomatic
- Asymptomatic patients can benefit from treatment if disease is widespread and the lesions are located in bones with future risk of complications such as long bones, vertebrae and skull
- Bisphosphonates are still the mainstay of treatment and alendronate is a useful therapeutic option for treatment

References

1. Dahniya MH. Paget's disease of bone in Africans. Br J Radiol. 1987 Feb;60(710):113-6. PubMed PMID: 3815005. Epub 1987/02/01. eng.
2. Selby PL, Davie MW, Ralston SH, Stone MD. Guidelines on the management of Paget's disease of bone. Bone. 2002 Sep;31(3):366-73. PubMed PMID: 12231408. Epub 2002/09/17. eng.
3. Siris E, Weinstein RS, Altman R, Conte JM, Favus M, Lombardi A, et al. Comparative study of alendronate versus etidronate for the treatment of Paget's disease of bone. J Clin Endocrinol Metab. 1996 Mar;81(3):961-7. PubMed PMID: 8772558. Epub 1996/03/01. eng.
4. Tucci JR, Bontha S. Intravenously administered pamidronate in the treatment of Paget's disease of bone. Endocr Pract. 2001 Nov-Dec;7(6):423-9. PubMed PMID: 11747277. Epub 2001/12/19. eng.