

Challenges of Managing Bone Cancer in Tanzania: Case Series from Tumbi Regional Referral Hospital

Kihwelu B^{1*}, Gembe A², Bilaro E² and Msangi S³

¹Orthopedic and traumatology Specialist Amana Regional Referral Hospital, Tanzania

²Internal Medicine Department Tumbi Regional Referral Hospital, Tanzania

³General surgery Department Tumbi Regional Referral Hospital, Tanzania

*Corresponding author:

Bryceson Kihwelu,
Orthopedic and traumatology Specialist Amana
Regional Referral Hospital, Tanzania,
E-mail: brycesonkiwelu@gmail.com

Received: 09 Aug 2021
Accepted: 23 Aug 2021
Published: 28 Aug 2021

Copyright:

©2021 Kihwelu B et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and build upon your work non-commercially.

Citation:

Kihwelu B. et al., Challenges of Managing Bone Cancer in Tanzania: Case Series from Tumbi Regional Referral Hospital. Clin Surg. 2021; 6(3): 1-5

Keywords:

Cancer; Chemotherapy; Radiology

1. Abstract

Bone tumors are among the rare cancers encountered among patients visiting our daily clinics, such that it poses challenges to clinicians to make early diagnosis and ensure well-timed management.

A case series is presented here, from Pwani region Tanzania, to demonstrate the encountered challenges.

2. Introduction

Cancer is a common health threat all over the world. According to the World Health Organization, Cancer is the second leading cause of death globally, and is responsible for an estimated 9.6 million deaths in 2018. Approximately 70% of deaths from cancer occur in low- and middle-income countries [1, 2, 3]. In Tanzania it's the 2nd and 5th cause of death among adult female and male respectively [4].

Primary bone cancer occurs when healthy cells in the bone change and grow out of control, and acquire the potential to invade other tissues around or far from its point of origin [5]. When health cells of other parts of the body undergoes cancerous changes and spread to the bone is called metastatic cancer and not primary bone cancer.

Primary bone cancer are extremely rare cancer accounting for less than 1% of all diagnosed cancer each year however, they cause significant morbidity and mortality [6].

There are various types of primary malignant bone cancer, the most

common being Osteosarcoma (35%), Chondrosarcoma (30%) and Ewing sarcoma (16%) [7].

Early diagnosis and the use of neoadjuvant and adjuvant chemotherapy in combination with safe limb sparing surgery, has improved long term and five years' survival rate in developed world to nearly 80% with about 90% to 95% of patient retaining their limbs [8, 9].

3. Problem statement

The effort to address cancer condition in Tanzania started in 1970s and has been improving with time, for instance in 1996 ocean Road Cancer Institute was established by law. In the year 2013 Tanzania National cancer strategic plan 2013-2022 was launched [10]. Despite of these milestones cancer services in Tanzania are not readily accessible as compared to other health services while each year about 35,000 new cancer patients are diagnosed and the number is expected to increase by 50% in 2020 [4]. In a country of 58 million people, cancer services are offered in five centers which are located in big cities: Out of the five centers its only Ocean Road National Cancer Institute which is located in Dar as Salaam offers a wide range of services including diagnostic, chemotherapy and radiotherapy [11].

As a result, only 10% of all diagnosed cancer patient in the country find their way to Ocean road cancer institute and 80% of these patient die within one year because of late presentation among other factors [11].

4. Objective

The objective of this case report is to raise awareness to stakeholders on diagnostic and treatment challenges faced by patients with bone cancer in Tanzania.

4.1. A Series of Four Cases attended at Tumbi regional referral hospital in Tanzania for a period of 1 year from April 2018 to April 2019 are presented in the paragraphs below:

Case 1

A 16-years-old young girl was attended in orthopedic clinic on May 2018. Review of previous clinical notice indicated that on the day of 1st encounter she was attended by a general practitioner and was diagnosed to have a closed fracture of proximal humerus. Limb was immobilized with triangular bandage, given analgesics and instructed to attend Orthopedic clinic after three weeks for follow up.

Further enquiry revealed that she had a slow growing swelling on the left shoulder which was painful at night. She claimed to have visited several primary health facilities for medical attention. In each visit she received either analgesics or combination of analgesics with antibiotics and assured that the swelling and pain would subside. Despite being treated, there was no improvement so she decided to seek help from spiritual leader who prayed for her and assured her she will be cured. A month before being attended to Tumbi hospital she sustained an injury on the same limb after falling while on routine dance practice on a stage. Upon clinical evaluation she had easy fatigability, awareness of heart beat, pale with a warm, non-fluctuant swelling from mid arm to the shoulder joint with obvious distended blood vessels, swelling was firm and tender. Physical finding of the affected limb are depicted on (figure 1a) while x-ray findings are delineated on (figure 1b).



Figure 1a



Figure 1b

Clinical and radiological findings were highly suggestive of advanced bone tumor most likely osteosarcoma. Patient and relatives were educated on the disease condition and consented for open biopsy and limb disarticulation after a long discussion which necessitated involvement of social workers and spiritual leaders. Biopsy was sent to national hospital; results came back three weeks later confirming osteosarcoma. She was referred to Ocean Road National Cancer Institute for chemotherapy. A month later, she returned to hospital to express her gratitude after being kept on course chemotherapy, there was no formal feedback from ocean road. Case notes and overview of bone tumor were presented to grand clinical meeting to raise awareness about bone tumors to clinician, nurses, supporting staff and medical students.

Case 2

A 12-years-old girl brought to the hospital following a six-month history of painless fast growing mass on the left shoulder. She had been to different hospitals and local traditional healer for treatment. She brought empty packs of prescribed antibiotic and analgesics from previous visits. The traditional healer made multiple skin incisions on the mass and applied local herbs repeatedly. Despite of different treatment modalities executed by different traditional healers through their own referral system the mass kept on growing and finally developed an ulcer. The child had fever, general body malaise, dizziness and blurred vision. On examination she could not stand without support of the affected limb, was cachexic, pale, increased pulse rate and orthopnea, local examination findings are shown on (Figure 2a). Features on plain x-ray were consistency with osteosarcoma. (Figure 2b) shows the child three days post-surgery.



Figure 2a



Figure 2b

Decision to agree the child to undergo limb disarticulation was facilitated by spiritual leaders as parents believed that any surgical intervention would worsen the condition. Disarticulation was done successfully; biopsy results came out three weeks later and were consistency with osteosarcoma. Patient was referred to ocean road national cancer institute for chemotherapy however there was no feedback to date.

Case 3

A 28 years old male showed up to Tumbi hospital for x-ray of the leg after being informally referred by traditional healer to obtain an X-ray. He had a painless swelling on the left leg with two pus discharging sinuses which had been there for around five months. He claimed to sustain a minor injury while playing soccer few weeks before he noticed the swelling. He consulted hospitals for treatment where he was diagnosed to have chronic osteomyelitis and was advised to take antibiotics for a long period of time. Despite of adherence to prescribed medication the condition worsens over time as the sinus developed and he started to experience pain on weight bearing.

Clinical and radiological examination were highly suggestive of an aggressive bone tumor, the limb was grossly swollen, tender with two serosanguinous discharging sinus on the anterior aspect. Conventional x-ray results are displayed on (Figure 3a). At the time of encounter, he had already used traditional medicine for couple of days and to his opinion he was progressing well so he insisted to be given his x-ray results to take to his traditional healer.

Health education on bone tumor and management plan was explained to him but he insisted that he would come back after discussing with his family members and his traditional healer. He was discharged home with analgesic and walking aid. Three weeks later he consented for bone biopsy which was taken to the national hospital and results were consistent with Ewing sarcoma (Figure 3b). Extensive counselling was provided on treatment options available at the hospital and referral option to Muhimbili Orthopaedic Institute and Ocean Road Cancer Institute nevertheless patient absconded from hospital.



Figure 3a

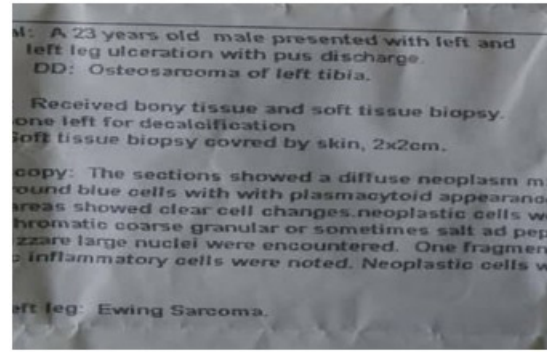


Figure 3b

Case 4

A 30 years old lady was referred to our clinic from district hospital following a painless mass on her left shoulder joint for more than 6 months. She was a known HIV positive patient on regular medication for three years. She felt discomfort on her left shoulder for several months which was later followed by a painless swelling on the same shoulder. She reported the problem to her attending physician at Care and Treatment clinic, she was kept on analgesics and encouraged to continue using antiretroviral drugs while waiting for the swelling to subside spontaneously. Four months later the swelling started to grow very fast and worried her. This time she decided to sort care from traditional healer where she was given medication for a month without relief. On her clinic day she underwent x-ray which revealed a lytic lesion involving the proximal part of the humerus.

By the time she arrived at Tumbi she was not in a position to use the affected limb and she could no longer walk upright because of the size and weight of the swelling. The provisional diagnosis of primary bone tumor with differential diagnosis of metastatic disease was reached based on clinical presentation and radiological findings. She was referred to Muhimbili Orthopaedic Institute as she refused to undergo any surgical intervention including biopsy. So far there is no feedback from the referred institution. (Figure 4a)



Figure 4a

5. Discussion

5.1. Diagnosis challenges and its implication on patient care

Bone tumors like other tumors may be cured or patient survival may be prolonged with less side effect of treatment provided that the diagnosis is made at the early stage of the disease. The 5-year survival rate of women with breast cancer in Europe is 82%, whereas it is 46% in Uganda, a little less than 39% in Algeria, and 12% in Gambia [3]. In most of developing countries diagnosis and management of bone tumors remain a challenge owing to its vague clinical presentation, rarity of the condition and lack of appropriate resources for diagnosis and treatment [12, 3].

Bone tumor general they present with persistent non-mechanical bone pain, predominantly at night. Sometime may present with features suggestive of common surgical or medical condition such as bone infection, anemia, common injuries and metastatic disease [9, 7].

Prompt radiological assessment by the use of either one or combination of plain x-ray, computed tomography (CT-Scan) and or Magnetic Resonance Imaging (MRI) aid in the initial diagnosis before confirmation by bone biopsy [8, 9]. The diagnosis of most bone tumors and other malignancies in Tanzania relays on clinical presentation and plain X-ray of which majority are misinterpreted and therefore most of the time diagnosis are not conclusive and limit early diagnosis [3].

Advanced investigations services like histopathology, CT scan and MRI are limited in number, expensive and most are available in big cities or private facilities [2].

All four cases attended at our center presented with Swelling/ lump and functional impairment. These features are commonly seen when the tumors have progressed through the cortex, distended the periosteum and invade underlying soft tissue. Miss diagnosis and mismanagement observed in all presented cases irrespective of clinical presentation and radiological feature implies that the rarity of bone tumors, vague clinical presentation and predominance of infectious diseases in our area has made clinician to narrow their index of suspicion to common conditions [7, 3].

The other reason may be attributed to shortage of skilled health care workers in primary health facilities where all primary consultation is usually done with a non-physician health worker who lacks knowledge or background in the presenting symptoms of cancer [13]. It also implies that clinician lacks basic knowledge of interpreting plain x-ray films and are not making good use of advancement in information technology which provides endless access to the right information from internet library, colleagues and senior doctors who can easily be accessed through social media like WhatsApp [14].

All steps in the cancer screening through diagnosis, staging, guidance in the surgical act and evaluation of complications of management, to monitoring the effect of treatment needs pathologist.

The situation is not ideal in Tanzania as in all presented cases histology results were available three weeks after the biopsy was collected. This is due to shortage of pathologist in the country, as of 2011 there were only 15 pathologists of which 99% were located in the five hospitals offering cancer treatment [11, 3].

5.2. Challenges of choosing the best treatment options

Tanzania health care system recognizes all key players in the health care delivery. Modern and alternative health care are equally regarded as treatment option provided that care providers abided to laws and regulation. The health policy of 2007 and revised draft of 2017 assures free medical treatment in public hospitals to all cancer patient once the diagnosis is well established [2]. Despite of this provision presented cases and families were not willing to accept proposed management plan at referral hospital even when the diagnosis was confirmed by histology followed by detailed health education. This can be attributed to antagonism of information provided within and between hospitals and alternative treatment care provider (traditional and spiritual healers). Previous studies showed that 70 to 80 percent of cancer patient seeks care from traditional healers before visiting hospitals [2, 8, 12]. Furthermore, a study done in the northern part of Tanzania revealed that symptom ailment was the most common reason to seek tradition medicine for most patients with chronic illness cancer being one of them [15].

6. Conclusion

The compounding effect of ignorance, wrong believe and lack of access to appropriate care, makes management of bone cancer challenging for patient and attending physician.

Lack of access to quality health services to patient with bone cancer is attributed to individual's patient's lack of purchasing power for health care, ignorance and wrong believes.

The lack of continuous professional development among medical personnel, lack of qualified staff, lack of formal referral system and communication between modern and alternative care providers, and inadequate check and balance to ensure alternative care providers obtain certain qualification and abide to their code of conduct are among factors which contribute to frustration to patient when it comes to decision making to choose the best treatment option.

The current health care policy which gives provision for free treatment for patient with chronic illness cannot with stand the ever-growing population of cancer patients and patients with other chronic diseases who need expensive and long term treatment.

Reference

1. T. W. Kohi, L. von Essen, G. M. Masika, M. Gottvall, and J. Dol. "Cancer-related concerns and needs among young adults and children on cancer treatment in Tanzania: a qualitative study," *BMC Cancer*, 2019; 19: 82.
2. United Republic of Tanzania, "The United Republic of Tanzania; The National Health Policy 2017," Report, no. October, 2017.
3. D. C. Stefan, "Cancer Care in Africa: An Overview of Resources," *J. Glob. Oncol.* 2015; 1: 30-36.
4. Prabhu Das, L. Stevens, C. Muha, S. Sivaram, and B. Kostelecky, "Integration of Research Priorities in Low and Middle-Income Countries: A Qualitative Analysis of National Cancer Control Plans," *J. Cancer Policy*, 2019; 20: 100190.
5. Martin TA, Ye L, Sanders AJ, Lane J, Jiang WG. "Cancer Invasion and Metastasis_ Molecular and Cellular Perspective - Madame Curie Bioscience Database - NCBI Bookshelf."
6. J. L. Ferguson and Turner SP. "Bone Cancer: Diagnosis and Treatment Principles," 2018; 98: 205-13.
7. J. Sybil Biermann et al., "Bone Cancer: Clinical practice guidelines in oncology," *JNCCN J. Natl. Compr. Cancer Netw.* 2013; 11: 688–723.
8. T. Ibrahim, L. Mercatali, and D. Amadori. "Bone and cancer: The osteoncology," *Clin. Cases Miner. Bone Metab.*, 2013; 10: 121-3.
9. P. G. Casali et al., "Bone sarcomas: ESMO-PaedCan-EURACAN Clinical Practice Guidelines for diagnosis, treatment and follow-up," *Ann. Oncol.* 2018; 29: iv79-iv95.
10. S. Welfare, "Ministry of Health and Social Welfare National Cancer Control Strategy (NCCS)," 2013.
11. P. F. Rambau. "Pathology practice in a resource-poor setting Mwanza, Tanzania," *Arch. Pathol. Lab. Med.*, 2011; 135: 191–3.
12. T. P. Hanna and A. C. Kangolle. "Cancer control in developing countries: Using health data and health services research to measure and improve access, quality and efficiency," *BMC Int. Health Hum. Rights*, 2010; 10: 24.
13. M. Burson et al., "Clinical and epidemiologic profile of breast cancer in Tanzania," *Breast Dis.* 2010; 31: 33–41.
14. Unnikrishnan B et al., "Perception among Healthcare Professionals of the Use of Social Media in Translating Research Evidence into Clinical Practice in Mangalore," *Int. J. Telemed. Appl.* 2018; 2018: 7573614.
15. J. W. Stanifer, U. D. Patel, F. Karia, N. Thielman, V. Maro, D. Shimbi, et al., "The Determinants of Traditional Medicine Use in Northern Tanzania : A Mixed-Methods Study," 2015; 10: e0122638.