Clinics in Surgery

Research Article
Published: 08 Feb, 2017

Surgical Oncology Practice in Low Income Countries; Difficulties and Practical Solutions

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Abstract

Background: Surgical oncology as a specialty is not widely adopted in the world including United Kingdom but this is not the case in Egypt. As a low income country in Africa, multiple problems face the evidence based practice of oncology science.

Presentation: We discuss briefly the common difficulties encountered in management of breast, thyroid, cervical, extremity sarcoma & melanoma and esophageal cancers. Also we discuss how we treat these cases in a way to overcome the shortage in facilities without harming the patient as possible. Finally, we discuss the screening difficulties and its implications on healthcare.

Conclusion: We think the health community is lacking knowledge about cancer surgery in low income countries. World health organization and other medical international societies should play a role in solving these problems.

Keywords: Surgical oncology; Africa; Egypt; Low income countries; Cancer treatment

Introduction

Surgical oncology, as a specialty, is highly debated and is not widely adopted in the world [1]. In most countries including United Kingdom, surgical oncology practice is done by subspecialists (gynecologic oncologists from obstetrics and gynecology specialty, breast surgeons and colorectal surgeons from general surgery specialty, etc.). However, in Egypt surgical oncology as a separate career does exist.

On the other hand, problems face surgical oncologists in low income countries, in coming with international cancer management guidelines (as ASCO, ESMO and NCCN). Some of these problems encountered in our practice in a tertiary cancer center in Egypt are displayed.

Methods

Common cancer practice at our tertiary center, as well as, in Egypt is discussed. Methods of management are compared to evidence-based practice. Research and Non-research articles concerning oncology care in Africa is reviewed, and processed in a way to highlight problems faced by physicians.

Results

Management of six solid organ cancers was considered by author to deviate away from international guidelines. Practical, as well as, economic obstacles are showed. English literature addressing much of these clinical situations is deficient, wherever possible referral to published articles from Egypt and Africa was done.

Discussion

Breast cancer

Breast cancer is the commonest cancer in women worldwide and so in Egypt [2]. Although different primary breast surgeries (mastectomy and oncoplastic procedures) are available in Egypt, axillary staging face some problems.

Sentinel lymph node biopsy with/without completion non-sentinel lymphadenectomy for positive sentinel nodes is now the standard of care in axilla negative early breast cancer cases [3]. However, the relatively expensive gamma probes and the non-availability of radioisotopes needed for radiometric sentinel node biopsy limit the wide practice of this approach.

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Received Date: *18 Nov 2016*
Accepted Date: *23 Jan 2017*
Published Date: *08 Feb 2017*

Citation:
Metwally IH. Surgical Oncology Practice in Low Income Countries; Difficulties and Practical Solutions. Clin Surg. 2017; 2: 1293.

In correspondence to this, axillary lymphadenectomy still the commonest practice in Egypt for node negative cases. While in some centers calorimetric sentinel node biopsy is adopted with patent blue or methylene blue, with controversial efficacy [4].

Another problem facing oncoplastic breast surgery is the relatively expensive breast implants (cost about 400£). This leads to popularization of autologous breast reconstruction, mainly latissimus myocutaneous flap, in volume replacement after total or partial mastectomy, at least at our center [5,6].

Lastly, unplanned breast cancer resection remains a nightmare for Egyptian oncoplastic surgeons. In this unique situation inadequately trained general surgeons, mainly in the private sector, do excisional biopsy of suspicious breast masses without applying the triple assessment approach. This problem still hinders much of conservative breast surgeries due to difficult assessment of cavity margins and bad incision drawing, increasing the rates of mastectomy.

Thyroid cancer

Recently, hemithyroidectomy with/without ipsilateral central neck dissection is increasingly practiced in microinvasive thyroid cancer and in selected cases with unifocal early differentiated thyroid cancer [7]. However, in Egypt due to lack of strict follow up programs and lack of patient compliance, total thyroidectomy is practiced by vast majority of surgeons whatever the stage or the type.

On the other side, anaplastic thyroid cancer emerges as a grave disease with only marginal value of surgery and very rapid recurrence in stage IVb patients [8]. Together with this, there is deficiency in radiotherapy facilities and small number of cyclotrons and linear accelerators in Egypt in specific and moreover in Africa [9]. This makes surgeons faced with advanced anaplastic thyroid cancer patients with no hope in timely palliative radiotherapy. Unfortunately, this compels us to do more palliative thyroidectomies in those patients with more loads on health facilities and with still bad prognosis.

Cervical cancer

The standard treatment of locally advanced cervical cancer is definitive radiotherapy (including external beam and brachytherapy) with concomitant chemotherapy [10]. Unfortunately, Brachytherapy resources (high-dose-rate & low-dose-rate) are only available in 20 out of the 52 African countries, and there are only 99 brachytherapy facilities on the entire continent [9].

The shortage in services of brachytherapy hinders the wide adoption of this classic treatment protocol in Egypt, leading to a large number of salvage hysterectomy operations. Salvage hysterectomy is done for patients with locally advanced cancer after teletherapy, when they fail to book a suitable date for brachytherapy, as an alternative practice, although no clinical trials validating this approach. Unfortunately, this surgery in irradiated pelvis is well known to increase the rate of surgical complications [11].

In another area, subtotal hysterectomy for benign uterine diseases used to be the standard practice aiming to reduce morbidity and sexual dysfunction. This approach has been debated since 2002 when Thakar et al. [12]. concluded equivalent morbidity with supracervical and total hysterectomy operations.

However, leaving a cervical stump in countries without well-established cancer screening programs is a catastrophe. As a result of still implementing subtotal hysterectomy by general gynecologists in Egypt, clinical oncologists, as well as, oncosurgeons are commonly facing stump carcinoma cases (commonly with advanced stage at diagnosis) [13] increasing load on health services.

Soft tissue sarcoma and malignant melanoma

Extremity soft tissue sarcoma and malignant melanoma are fortunately rare in Egypt [2]. In spite of this, being a tertiary cancer center in Egypt you may encounter two to three cases per month.

The problem is in these cases with locally advanced extremity sarcomas and in-transit melanomas. In these cases isolated limb perfusion/infusion used to be a suitable treatment option with good results [14]. Expense of the isolated limb perfusion method together with poor experience near completely erased this option in Egypt, resulting in a larger number of major amputations. However, few centers in Egypt showed good results with isolated limb infusion in locally advanced soft tissue sarcoma [15], but still not widely adopted.

Esophageal cancer

Hopefully, PET/CT scan provided an effective tool to screen all diagnosed patients with esophageal cancer for occult metastasis prior to radical surgery, and so became an integral part of staging of these tumours in most international guidelines [16].

On the other-side, the price of these facilities overcome the capability of low income countries to withstand, making its use limited resulting in increasing rate of non-curative morbid radical surgeries.

Locally advanced tumours

Lastly, the lack of national screening programs (for prostate, breast, cervical, colorectal and etc.) leads to higher incidence of locally advanced tumours. This leads to generally worth overall results of cancer treatment and to lower cancer survival in low income countries as compared to Europe and USA [17].

Conclusion

In low income countries, almost all Africa, economic issues lead to deficient health care services (radiotherapy, isolated limb perfusion/infusion, gamma probes, silicone implants, PET scan). This, together with deficiency of well established screening programs and lack of patient compliance, probably due to less efficient education, result in complexing cancer treatment plans. Surgical oncologists should be trained to manage unusual situations and should be supported internationally to involve there alternative treatment pathways in well constructed clinical trials.

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