Summary

The sentinel lymph node is defined as the lymph node (s) which is in direct drainage pathway from the primary tumours and it is at highest risk of harboring metastatic deposits from the primary lesion .

Cabanas (1977), was the first to use the term sentinel lymph node and was the first to apply the sentinel node biopsy in penile carcinoma. then Morton (1992), apply this concept to malignant melanoma, and following the success of this technique in melanoma it was applied to breast cancer and other solid malignancies .

The sentinel or guardian lymph node within the regional lymph node basin before its subsequent spread to other lymph node, has raised the possibility that all solid malignancies might be remediable to the diagnostic and potential therapeutic benefits of sentinel lymph node identification, staging and to diminish surgical morbidity of radical lymphadenectomy .

The development of the concept of sentinel lymph node has had a revolutionary effect on the way of radical cancer surgery , it was believed that complete lymph node dissection is the only way to gauge against and control the spread of many invasive malignancies .

However there is evidence that the sentinel lymph node (s) , that the first lymph node to receive lymphatic drainage from the malignant tumour, may accurately predict the status of entire lymph node group and selective lymph node dissection become an alternative to the radical lymph node dissection avoiding the patient the complication of the later .

Because in most solid malignancy, including melanoma, the most important predictive factor for the survival is the presence or absence of lymph node metastasis , a great deal of attention has been focused on management of the regional lymph node .

Application of the sentinel lymphadenectomy is considered to be one of the most important modalities for multidisciplinary management of breast cancer and malignant melanoma .

This technique is based on the hypothesis that, dissemination in the regional lymph node is sequential .

Sentinel lymph node identification or dissection is an ideal procedure because it is minimally invasive, but powerful enough to select the affected lymph node of the nodal basin, and also because significantly fewer lymph node are harvested, the harvested nodes can processed meticulously for occult metastasis .

There are several methods for identification of SLN in the lymph node basin , the blue dye technique (using Isosulfan blue dye or patent blue dye) the radio colloid technique (using technium 99-m colloid) or combination of both .

Over all the success rate of harvesting the sentinel lymph node by the blue dye alone is about 82% , by radio colloid alone is about 94% and by the combination of both is about 98% .

The importance of sentinel lymph node in melanoma is raised from the report of Morton (1992) , that clearly demonstrated that when cutaneous melanoma metastaise to the regional lymphatics , it most commonly will do through the sentinel lymph node also the great importance of regional lymph node as predictor factor for survival and prognosis .

Most melanoma patients who develop metastatic spread , first develop tumour in ipsilateral lymph nodes . The path of spread is predictable for tumours of extremities, although tumours occasionally spread first to popliteal and anticubital nodes rather than to the more usual inguinal or axillary node groups , drainage from the primary malignant melanoma in head and neck is less straightforward and spread to posterior cervical lymph nodes or across the midline is frequently encountered , primary malignant melanoma on the trunk present a particular problem if they are located near the midline, at which point bilateral spread is possible , tumours in the area of waist line may involve the axillary and inguinal nodes simultaneously .

At this time , the standard of care for melanomas between 1-4 mm in thickness is wide local excision and some form of staging of the regional lymphatic basin , The sentinel lymph node biopsy technique is the best and least morbid method to stage the regional lymph node basin .

Thus selective sentinel lymph node dissection in patient with malignant melanoma considered a standard approach for staging primary malignant melanoma, provided that surgeons, nuclear medicine physicians and pathologists are adequately trained , and because the false-negative result is extremely low , it can't be assumed that those

patients with negative SLN should have no micro metastasis in the regional lymph node basin , thus SLN allow approximately 80% of melanoma patients to be speared the formal lymph node dissection ; Thus avoiding them the hazards and complication of radical lymph node dissection .

Sentinel lymph node dissection in melanoma provided a great diagnostic accuracy and lower morbidity as substantial numbers of truely node negative patients with cutaneous malignant melanoma can be spared the morbidity of regional node dissection , that has a therapeutic value , even if sentinel lymph node don't ultimately prove to improve survival , this approach may provide biologically relevant information that can be used to improve patients out comes. However the most exciting possibility of SLN process , that it will lead to early diagnosis of micro-metastasis in the regional lymph node , this not only makes it useful as a clinical staging procedure but it also open window to new apprortunities to study micrometastasis and its evaluation within the SLN .

The aim of this essay is to review the importance of sentinel lymph node in malignant melanoma and its value in diagnosis of early metastases and improving morbidity and mortality rates .