
UNIT 2 COMMON MALIGNANCIES IN THE ELDERLY

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2.0 OBJECTIVES

After reading this unit, you should be able to:

- identify the common malignancies and their clinical features in the elderly;
- organise basic investigations and appropriate referral to a tertiary care unit with surgical, medical and radiation oncology facilities;
- outline the various treatment modalities for common cancers and optimum combination for the elderly;
- screen for and identify high risk patients; and
- define follow-up strategies for treated patients.

2.1 INTRODUCTION

You have already learnt the principles of oncology in the first unit of this block. In this unit you shall appraise yourself of common malignancies affecting elderly men and women. Majority of common malignancies comprise tumors of the aero digestive tract. The cancers seen in elderly are: lung cancer, gastrointestinal cancers and genitourinary cancers. The identification of clinical features, an early diagnosis and appropriate referral are the mainstay of management of common cancers at the community level. In addition you should also be aware of current concepts of multimodality management of cancers using surgery, radiotherapy and chemotherapy. Post treatment rehabilitation and follow up for detection of recurrences is equally important in cancer patients. The palliative care of the terminally ill and advanced malignancy patients will be covered in the last unit of this block. The subsequent unit deals with the common malignancies one by one in detail.

2.2 LUNG CANCER

Lung cancer is the commonest cancer in the world and its incidence is rapidly increasing in the developing countries like India. The risk of lung cancer in smokers is 30 times greater than in non-smokers and passive smoking increases the risk by two fold. Other risk factors include occupational chemicals like asbestos, chromium, tar and nickel. Lung cancer can also develop in old healed scars of the lung due to tuberculosis and other infections.

2.2.1 Clinical Features

In India, 8 out of 10 lung cancer patients are males, usually at the age of 60 years. Chronic cough not responding to routine treatment and hemoptysis are the early clinical symptoms of lung cancer and in majority of the early stage patients you only find a coin lesion in chest X-Ray. Chest pain, dyspnoea due to pleural effusion, hoarseness of voice, anorexia and weight loss are symptoms of advanced lung cancer. Some lung cancer patients can present with features of paraneoplastic syndromes like myopathy and neuropathy. Presence of cervical lymphadenopathy, hepatomegaly and pathological fractures are signs of metastatic lung cancer.

2.2.2 Histological Types

The various pathological types of lung cancer include:

- a) Adeno and large cell (50-60%)
- b) Small cell (20%)
- c) Squamous cell (25-30%)
- d) Miscellaneous (10%).

Histological type influences the management policy in lung cancers and they can be divided in to small cell lung cancer (SCLC) and non small cell lung cancer (NSCLC). The small cell varieties are highly aggressive and chemosensitive tumors in comparison to non small cell varieties which are relatively radiosensitive.

2.2.3 Staging

As described in Unit-1 of this block, T (Tumor), N (Node), M (Metastases) stage in according to UICC/AJCC staging system is normally done. On the basis, we can classify lung cancer into:

- 1) **Early lung cancer:** Tumor confined to lung < 2cm, .No nodal / distant spread
- 2) **Locally advanced lung cancer:** Lung nodule with invasion of chest wall, mediastinal structures and hilar or mediastinal adenopathy.
- 3) **Metastatic lung cancer:** Spread to liver, brain, bones, adrenals and others.

2.2.4 Investigations

Simple investigations like Chest X-ray can be carried out at your set up. This will give you a suspicion of the possibility of a cancerous lesion. For more sophisticated investigations like CT scan, biopsy and bone scan you may refer the patients to a hospital where such facilities are available.

- i) **Chest X-ray:** Chest X-ray is the simplest and inexpensive test to diagnose as well as to screen lung cancer. Early lesions commonly present as a rounded opacities, known as coin lesion (Fig. 2.1). Advanced cases present with mediastinal enlargement, pleural effusion and invasion of ribs.



Fig. 2.1: Antero posterior and lateral views of chest X-ray showing a coin lesion in right upper lobe (Courtesy: Dr. Deo and Dr. Sonal)

- ii) **Sputum cytology:** In this, cancer cells shed in the sputum are identified. However, sputum cytology is positive only in 60% of lung cancer patients especially with central tumors.
- iii) **Bronchoscopy:** Seventy five percent of lung cancers can be visualised using a fiber optic bronchoscope and a biopsy or a brush cytology can be taken for histological confirmation and typing.
- iv) **CT scan chest:** CT scan is the most valuable test regarding the extent of disease, spread to adjacent organs and also helps in planning the management policy and evaluating the response to chemotherapy and radiotherapy treatment
- v) **Percutaneous or transbronchial biopsy:** For peripheral lesions not accessible for bronchoscopy these techniques can be used for histological diagnosis.
- vi) Bone scan, CT Abdomen and brain, bone marrow examination are required to rule out distant spread to organs like liver, brain and bones.

2.2.5 Treatment and Results

The factors that can affect the treatment decision are as follows:

- i) Age and general condition of the patient
- ii) Pulmonary function tests
- iii) Stage and type of tumor (NSCLC vs SCLC)

Management of Non Small Cell Lung Cancer

All early stage patients with good general condition and pulmonary status should undergo surgery. There is a tendency to perform less radical operations like lobectomy and segmental

resections (excision of tumor and surrounding normal tissue) instead of pneumonectomy (resection of entire lung) these days. Patients with locally advanced disease can be offered two to three cycles of chemotherapy followed by surgery or chemoradiation in patients not suitable for surgery. Majority (more than 70%) of lung cancer patients present with advanced (inoperable) disease and require palliation for pain, cough, haemoptysis and pleural effusion. In this situation, a short course of radiotherapy as 20 Gy, in five daily fractions over one week or 20 Gy in four weekly fractions of 5 Gy every week will relieve symptoms. The three year survival of these patients ranges from 15 to 20%.

Management of Small Cell Lung Cancer

Majority (70-80%) of the SCLC patients present with advanced stage disease and the main stay of treatment is chemotherapy and radiation. Only 5% of SCLC patients are suitable for surgery. The median survival of these patients is approximately one year.

Check Your Progress 1

- 1) What are the common symptoms of lung cancer?
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- 2) Mention the commonest radiological finding of lung cancer?
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- 3) What are the types of lung cancer surgery?
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- 4) Indicate True (T) or False (F):
 - i) Smoking decreases the risk of lung cancer. (T/F)
 - ii) Hoarseness of voice is a symptom of early lung cancer. (T/F)
 - iii) SCLC is chemosensitive tumor. (T/F)

2.3 HEAD AND NECK CANCERS (ORAL, HYPOPHARYNX AND LARYNX)

Cancers of the head and neck region are very common, and oral cancer is the commonest malignancy in India. Although several tumors can occur in this anatomic location, we shall concentrate on squamous cell cancer involving the oral cavity, the hypopharynx and the larynx, since these are the most commonly encountered cancers in practice. The overall male to female ratio is 4:1 and these cancers commonly develop around the age of 50 years and above. Since several features in the diagnosis and management of these cancers are common, we shall consider them together.

Aetiology: Most tumors affecting the upper aerodigestive tract have common aetiological factors, mainly tobacco intake in any form. Chewing is the commonest form of tobacco intake in India. Alcohol intake, poor oral hygiene and sharp teeth (dental ulcers), food habits and oral syphilitic infection are associated causes of cancer.

You can remember the 5 S's (Spirits, Smoking, Spices, Sharp teeth and Syphilis).

2.3.1 Clinical Features

You will see that symptoms depends on the site of lesions as described below:

Oral Cancer

Patient will present to you with non-healing ulcer, or growth in the mouth, bleeding per mouth, loose tooth, white patch (Leukoplakia), trismus (Inability to open the mouth) and neck swelling.

Hypopharyngeal Cancers

Patients usually complaints of pain in the throat or ear, bleeding , dysphagia or odynophagia (difficulty or painful swallowing) ,swelling in the neck, drooling of saliva.

Laryngeal Cancer

Hoarseness of voice is the earliest and the most common symptom of laryngeal cancer. The patient can also have pain, bleeding and neck swelling.

Leucoplakia: Some patients may present with whitish patches in the mouth called leucoplakia (Fig. 2.2). These lesions should be treated as premalignant, biopsied and carefully followed up since 10% can develop into invasive cancer.



Fig. 2.2: Showing a leukoplakic patch involving alveolus and lip (Courtesy: Dr. Deo and Dr. Sonal)

Clinical examination: This should include: A general physical examination consists of evaluation of the cervical adenopathy- size, number and level of nodes, presence of matting or adherence between the nodes. Site and extent of tumors either by mirror examination or by endoscopy . This may be difficult some times due to trismus (Figs. 2.3 and 2.4).

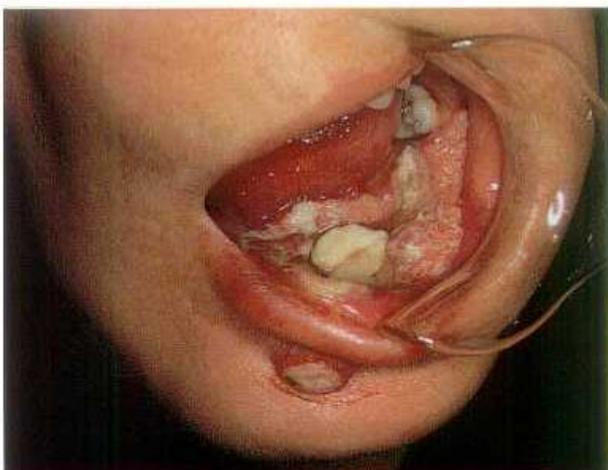


Fig. 2.3: Showing a growth in the alveolus (Courtesy: Dr. Deo and Dr. Sonal)



Fig. 2.4: Leukoplakic patch and growth in the tongue (Courtesy: Dr. Deo and Dr. Sonal)

2.3.2 Investigations

These include investigations for management and those to confirm the diagnosis.

- A Complete hemogram
- Liver function tests
- Chest X-ray—to rule out metastases
- Biopsy—to confirm the diagnosis. (Squamous cell carcinoma is the commonest malignancy)
- X-ray mandible in cases of oral tumors to check for bone invasion
- Triple endoscopy—Pharyngoscopy, Nasopharyngoscopy and laryngoscopy are required for the diagnosis and staging of hypopharyngeal and laryngeal cancers.

2.3.3 Staging

The TNM staging is used. The detail has been already given in Unit -1 of this block. A simple means of staging the disease is—

Early: Limited to the local site with no bone or skin or lymph nodal involvement.

Locally Advanced: Extensive local disease with involvement of bone or skin, and lymph nodes.

Metastatic: Hematogeneous spread to bones, lungs, liver or brain.

In India, approximately 75% present with locally advanced disease and 20% with early disease. Only 5% present with metastatic disease.

2.3.4 Treatment and Results

The main modalities of treatment are surgery and radiotherapy. The main goals of head and neck cancer treatment are:

- i) Eradication of the primary
- ii) Control of neck nodes
- iii) Preservation of cosmesis and function.

Surgical management

Surgery alone is curative for early head and neck cancers and surgery in combination with radiotherapy is recommended for locally advanced disease.

The principles of surgery are:

- 1) Removal of the tumour with adequate margins of soft tissue, bone and skin as necessary.
- 2) Lymph nodal dissection for neck node clearance (radical & modified neck dissection).
- 3) Reconstruction of bony and soft parts using myocutaneous flaps.
- 4) Usually, a composite resection of the tumour with bone (segmental, hemimandibulectomy or arch resection) is performed along with a neck dissection (Commando operation).

Radiotherapy: Radiotherapy can be used as a primary curative modality for early head and neck cancers and it is routinely recommended after surgery in locally advanced disease. In early cancer, it provides comparable control rates to surgery. The aim of radiotherapy is to encompass and irradiate the primary tumour as well as bilateral lymphatic fields. Hypopharyngeal and laryngeal cancers are mainly treated with radiotherapy since it preserves the organ and function. Usually, doses of 60-70 Gy are required for control of tumor. In advanced and inoperable cases, radiotherapy in the doses of 2000-2500 cGy can be given for pain relief and palliation.

Chemotherapy: Currently, chemotherapy is not part of standard treatment protocols for aerodigestive malignancies. Radical radiotherapy along with chemotherapy is being used recently for laryngeal and hypopharyngeal cancers to preserve the organs and improve the quality of life. Its being used for palliation in inoperable cases and along with radiotherapy in organ preservation therapies. The commonly used drugs are Cisplatin, methotextrate and 5 Fluorouracil. Chemotherapy can also be used for palliation in inoperable cases.

Results: For early stage disease, the 5-year survival rates are 70-80%, while for advanced disease the survival rates are 20-40%.

Check Your Progress 2

1) A 60 year old male with a history of tobacco chewing comes to you with an ulcer on the tongue. How will you evaluate this patient?

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2) What are the main modalities of head and neck cancer management?

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3) What are the risk factors for oral cancer?

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4) Indicate True (T) or False (F):

- i) Tobacco chewing is the most common risk factor for oral cancer. (T/F)
- ii) Neck dissection is performed to control the primary tumour. (T/F)
- iii) Radiotherapy helps in preservation of voice in laryngeal cancer. (T/F)

2.4 GASTROINTESTINAL CANCERS

In the previous sections, you have learned about lung and head and neck cancers which occur in the elderly. In this section, we will learn more about common cancers affecting the gastrointestinal tract in the elderly. The most common cancers in this organ system are esophageal cancer, gastric cancer and colorectal cancer. Although cancers of esophagus and stomach are seen in 5th and 6th decades, the colorectal neoplasms are seen usually after 60 years of age. Now, you will learn more about the presenting features, basic investigations, staging and current treatment policies with special reference to your role in the early diagnosis, treatment and management of these problems.

2.4.1 Esophagus

Esophageal cancer is a common cancer affecting the elderly. It often presents late or with metastases, due to delay in presentation or diagnosis. Cancers affecting the upper and middle esophagus are commonly squamous cell tumours, while the lower esophagus has an equal incidence of squamous cell carcinoma and adenocarcinoma.

As you already know, most aerodigestive cancers are associated with increased intake of tobacco or alcohol and these are also the commonest risk factors for esophageal cancer.

Clinical Features

Most patients of cancer esophagus present with difficult or painful swallowing of food. As you must have seen, this is a common symptom in old age, so one must have a high index of suspicion. Other physical symptoms and signs are pain in abdomen, vomiting after meals, regurgitation of food and blood in the vomitus. Symptoms rarely develop until the esophageal lumen is greatly compromised, or metastases have occurred.

Investigations

Initially, you should perform a complete physical examination of the patient. Other basic investigations like a complete hemogram, liver function test, chest x-ray should also be done to rule out distant metastases. You should perform a barium swallow and a CT scan of the chest and the abdomen. These can predict invasion of adjacent structures like the aorta, the tracheobronchial tree and pericardium as well as detect liver metastases. An upper gastrointestinal endoscopy (Fig. 2.5) confirms the growth and a biopsy can also be taken to confirm the diagnosis.

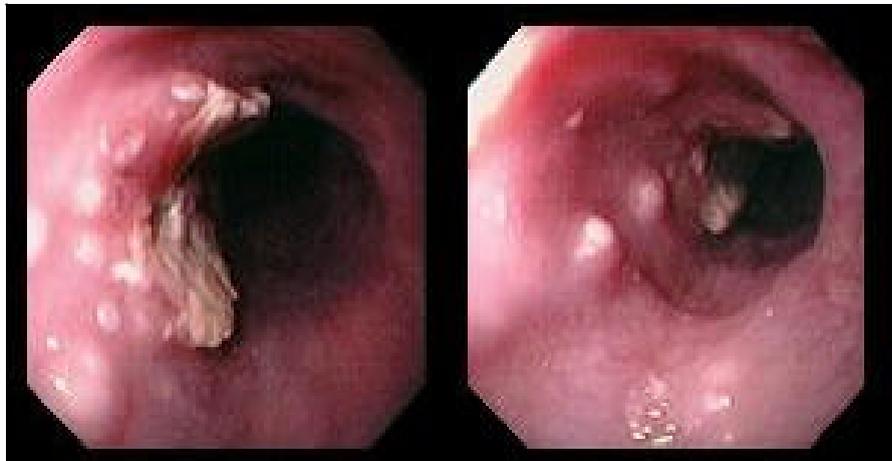


Fig. 2.5: Endoscopic view of carcinoma esophagus (Courtesy: Dr. Deo and Dr. Sonal)

Staging and Prognosis

A staging system for esophageal cancer is available. Patients who present with a small length (less than 5 cm) of esophageal cancer without obstruction or extraesophageal disease are more likely to have a long term survival. Most patients of esophageal cancer do not fulfil these criteria and present with locally advanced disease. Majority of these patients die within 6 to 10 months of diagnosis. The survival after 5 years is less than 10%.

Management

- 1) Surgical resection of the primary tumour is the only curative modality and less than 50% are operable at presentation. The esophagus can be resected through the abdominal approach (transhiatal) or thoracic approach (transthoracic). Esophagectomy is a major operation and mortality varies from 5-20%. Patients presenting with locally advanced disease require palliation to relieve obstruction of the food passage.

To palliate an obstructed patient and provide relief from dysphagia, the measures that can be offered include:

- Endoscopic placement of a nasogastric tube for feeding
- Laser luminization of the esophagus.
- Endoscopic stent placement.
- Feeding gastrostomy: this does not palliate the dysphagia so is not done commonly.

- 2) Combined modality treatment: Chemotherapy using Cisplatin and 5-fluorouracil along with radiation therapy can improve survival but at the cost of increased toxicity.
- 3) Treatment of advanced disease: Patients unfit to undergo surgery or suffering from locally advanced disease can be treated with radiotherapy aimed at relieving the symptoms.

Treatment Outcome

As mentioned before, the treatment outcome for esophageal cancer is poor, with only 10% patients surviving at 5 years. Early diagnosis and prompt referral to a tertiary care regional cancer center is therefore necessary.

2.4.2 Stomach

Gastric cancer follows a marked regional variation throughout the world and also in India—it is more common in South India than in North India due to the intake of spicy food in the South. Adenocarcinoma is the commonest histologic type of gastric cancer. It is commoner in males and can occur in families. Pernicious anaemia and dietary factors are also involved in the pathogenesis.

Clinical Features

Gastric cancer often presents with advanced disease, because its initial symptoms are not specific. Your patient may present with anorexia, early satiety or weight loss and anaemia. Some patients may present with dyspepsia similar to ulcer pain which may also respond to antacid therapy for a short time. You must have seen several patients with such symptoms in your practice-while most may be innocent, persistent symptoms warrant investigation! An abdominal mass, usually in the epigastric region may be found on physical examination.

Investigation

All investigations should begin with a thorough physical examination. Anaemia is a common presenting feature. A complete hemogram, liver function test and chest x-ray should be obtained. An ultrasound of the abdomen helps to rule out distant metastases—if available, a CT abdomen gives more information on local spread and metastases. An upper gastrointestinal endoscopy (Fig. 2.6) helps in visualising the tumor and taking a biopsy for histologic diagnosis.

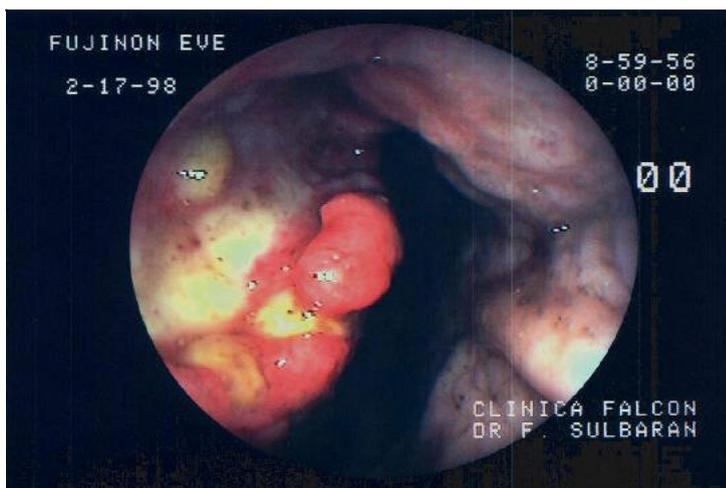


Fig. 2.6: Endoscopic picture of locally advanced gastric cancer (Courtesy: Dr. Deo and Dr. Sonal)

Staging

Most of these patients are locally advanced or metastatic when they present for treatment. Patients with one or more of the following clinical signs are usually unresectable:

- Palpable abdominal mass
- Severe anemia
- Significant weight loss (more than 10% of the total body weight)

Treatment

- 1) **Surgical Resection:** A subtotal gastrectomy with 5 cm uninvolved margins with removal of lymph nodes is the treatment of choice for gastric cancer.
- 2) **Other surgical procedures:** These are performed for non-resectable gastric cancer with a palliative intent.
 - Palliative gastric resections to relieve bleeding and obstruction
 - Bypass of growth using anterior gastrojejunostomy.
- 3) **Chemotherapy and Radiotherapy:** Do not have a clearly defined role in gastric cancer.

Treatment Outcome

Early gastric cancer is usually associated with a much better survival (50-95%), while advanced tumors have a lower survival of 15% or less. Early referral on suspicion, and screening in high risk patients as well as in areas with a high incidence of stomach cancer is therefore necessary.

2.4.3 Colorectal

Colorectal cancer is one of the commonest cancers in the developed world, and its incidence is slowly increasing in India. The median age for diagnosis in western countries is 70 years, in India it is 60 years. Risk factors may be familial polyposis syndromes which have a higher associated incidence of colorectal cancer. Dietary factors such as a low intake of fiber or high fat content in the diet are also important.

Clinical Features

The common presenting features of colorectal cancer are:

- Bleeding per rectum which may be altered (malena) or fresh blood.
- Features of anemia such as weakness, easy fatigability which are common in the elderly.
- Features of intestinal obstruction such as vomiting, abdominal distension and non passage of flatus and stools. Intestinal obstruction is commoner in left sided colonic growths.
- Rectal cancer may also present with painful defecation or spurious diarrhoea.

Clinical examination may reveal a mass in the abdomen or a growth on per rectal examination. You must look for evidence of metastatic disease like jaundice, hepatomegaly or ascites.

Investigations

The diagnosis of colonic cancer requires a high index of suspicion because these symptoms are commonly present in the elderly. A complete hemogram should be performed since anaemia is a common feature. Liver function tests, chest X-ray and ultrasound abdomen are the minimum requirements to rule out metastases. A proctoscopy or a colonoscopy helps to determine level of the growth and take a biopsy to confirm the diagnosis. A CT scan of the abdomen should be done to determine site of growth, extraluminal spread and lymphatic or distant metastases.

Staging

The commonly used staging for colorectal cancer is Dukes staging based on the depth of invasion in the intestinal wall and lymphatic spread. A simple staging method is:

Early: Confined to the lumen

Locally advanced: Extraluminal spread with lymph node involvement

Metastatic: Distant spread to the lungs, liver and other sites.

Management

Surgery is the primary modality of treatment for colorectal cancer. The aim of surgery is to remove the tumor with adequate surgical margins, perform an adequate lymph node dissection and preserve the sphincter function if possible. Surgical management of colonic cancer is radical colectomy which include:

- Removal of the colonic growth with adequate margins.
- Removal of the arterial supply of the colon as far proximal as possible (high ligation) to maximise the lymph node dissection.
- Establishment of gut continuity.

For patients presenting with obstructing growths a proximal colostomy is recommended if the general condition is poor.

Surgical Management of Rectal Tumors

Middle and upper rectum (7-15 cm from anal verge) anterior resection with preservation of anal sphincter mechanism.

- 1) **Lower rectum:** Abdomino perineal resection with end colostomy.
- 2) **Adjuvant therapy:** Chemotherapy using 5 fluorouracil for a period of one year after surgery in node positive patients prolongs the disease free survival.
- 3) **Radiotherapy:** Currently has no established role in colon cancer. In rectal disease, radiotherapy is either given preoperatively or postoperatively to increase the local control.

Prognostic Factors: The site of the tumour, presence of lymph nodes and metastatic disease determine the prognosis. Metastatic disease is the commonest cause of death. In Stage A or B of the Dukes classification, the 5 year survival is 60-70%.

Check Your Progress 3

1) What are the modalities of dysphagia relief in esophageal cancer?

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2) What clinical findings suggest inoperability in carcinoma stomach?

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3) A 65 year old man presents with a history of bleeding per rectum 6 months duration which is painless. How would you evaluate this patient?

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4) Indicate True (T) or False (F):

- i) 50% of esophageal cancers are inoperable at presentation. (T/F)
- ii) Upper GI endoscopy is essential for the diagnosis of colon cancer. (T/F)
- iii) Sphincter salvage is feasible in low rectal cancers. (T/F)

2.5 GENITO-URINARY CANCERS

Genito-urinary problems are common in the elderly and cancers of the bladder or prostate comprise an important part of geriatric cancers. These cancers are commonly diagnosed above 60 years of age and only 15% occur below 65 years. In this section, you will learn about the presentation, diagnosis and management of bladder and prostate cancer.

2.5.1 Urinary Bladder

As you know that bladder cancer usually affects people in the 6th to the 7th decade. However, in India persons younger than 50 years are also diagnosed. Men are more commonly affected than women. The most common histology is transitional cell carcinoma.

The Risk Factors Include: Occupational exposure to dyes such as aniline, smoking, pelvic irradiation specially in women treated for cancer cervix by radiotherapy, Chemotherapeutic drugs such as cyclophosphamide, infection with *Schistosoma hematobium*, bladder stones.

Clinical Features

Patient will present to you with history of painless hematuria, burning micturition and pyuria, pain in the pelvic region and in lower limb edema is usually associated with advanced disease.

Clinical examination usually does not reveal any specific findings.

Investigations

These include:

- 1) A complete hemogram with liver function tests.
- 2) A chest x-ray to rule out distant metastases
- 3) Ultrasound abdomen with a full bladder to assess extent of the disease and local and distant spread such as lymph nodal involvement, ascites or liver metastases.
- 4) **Urine cytology:** This simple non-invasive examination detects nearly 70% of all cases.
- 5) **Cystoscopy:** This helps in visualising the tumour and taking biopsies from it or from grossly abnormal areas to look for carcinoma in situ. It is recommended in all patients with hematuria.
- 6) **Bone scan:** Should be done in patients with elevated serum alkaline phosphatase and acid phosphatase or bone pains.

Staging and Prognosis

Prognosis correlates with the histology of the disease, depth of invasion into the vesical wall and tumor grade. Multicentric tumors have a worse prognosis. A simple staging method is:

Early: Confined to the mucosa, lamina propria.

Locally advanced: Deep infiltration into the muscle or perivesical fat.

Metastatic: Involvement of regional lymph nodes or visceral metastases.

Management

1) **Surgery:** Surgery when feasible, offers the best chance of cure in bladder cancer.

Early bladder cancer can be managed by:

- 1) Transurethral endoscopic resection.
- 2) Segmental resection of the bladder for solitary localised growths.

- 3) For advanced cancer: A radical cystectomy should be offered with urinary diversion into the sigmoid colon or a specially created ileal pouch.
- 4) The other options include: Palliative endoscopic excision of the tumor, Urinary diversion in cases of obstruction
- II) **Radiotherapy:** It can be offered as radical treatment for patients who are medically unfit for surgery and for palliation in advanced disease. Since only 25-30% of patients are suitable for curative surgery, a majority of patients are referred for chemotherapy or radiotherapy.
- III) **Chemotherapy:** This can be administered in the following ways:
 - 1) Intra vesical : Useful for low grade tumours after transurethral resection. Thiotepa, and BCG are commonly used.
 - 2) Adjuvant therapy: Chemotherapy with cyclophosphamide, doxorubicin and cisplatin can be given after cystectomy for high grade tumours, or those with muscle invasion and lymph nodal involvement.

Currently, chemoradiation can be offered with the aim of organ preservation. Follow up should be with cystoscopy and urine cytology.

Treatment outcome: For superficial tumours, the 5 -year survival is 60-80%, while for locoregionally advanced and metastatic disease, the 5 year survival is 15-20%.

2.5.2 Prostate

Cancer of the prostate is the commonest malignancy men above 60 years. As you know, prostatic symptoms increase with increasing age and nearly 70% of all males have prostatic symptoms, such as dribbling of urine, hesitancy and poor flow by the age of 80. Although most cases are due to benign prostatic hyperplasia, nearly 30% have latent prostatic cancer.

Clinical Features

Cancer of the prostate usually presents with obstructive symptoms such as poor flow, and hesitancy, dribbling of urine. Terminal hematuria can also be present. Sudden onset or rapid progression of symptoms usually indicates cancer. Per rectal examination reveals a hard irregular prostatic mass with loss of normal architecture of the gland.

Investigations

After a complete physical examination, the patient must undergo:

- 1) Complete hemogram
- 2) Liver function tests
- 3) Serum acid phosphatase, calcium and phosphorus, which may be raised
- 4) **Tumour markers:** Prostate specific antigen (PSA) which is elevated in 90% of biopsy proven cases. However, several benign conditions can also lead to this elevation.
- 5) **Biopsy:** Transrectal needle biopsy is usually done to prove the diagnosis.
- 6) **Trans rectal ultra sound (TRUS) :** To detect seminal vesicle involvement and periprostatic spread.
- 7) Skeletal survey or bone scan is done to rule out bony metastases.

Staging system and Prognosis: TNM staging

Adenocarcinoma is the commonest form of cancer. Almost all prostatic cancers are multifocal. Spread occurs after penetration of the capsule and depends on the grade of tumour. Spread is usually hematogeneous and commonly produces osteoblastic lesions in the spine. Bone pain may be the first presenting sign of prostate cancer.

A simple method of staging is as follows:

Early: Single lesion confined within the prostatic capsule.

Locally advanced: Multiple nodules with periprostatic spread to the seminal vesicles.

Metastatic: Involvement of pelvic nodes, bladder or distant metastases.

Management: The management options for a patient with cancer prostate depend on the severity of symptoms, the grade and stage of the tumour and the general condition of the patient.

1) **Surgery:** The surgical treatment of a case of carcinoma prostate include:

Relief of urinary obstruction: by catheterisation, suprapubic cystostomy or by transurethral resection to relieve bladder obstruction.

Radical prostatectomy: Only done in early cancer with a good general condition of patient. It involves removal of the prostate with the capsule, with a pelvic lymphadenectomy. This radical surgery can cause impotence and incontinence, but has a high degree of success in achieving cure.

2) **Radiotherapy:** Useful in early as well as locally advanced tumours. Can be used as an alternative to radical surgery when patients general condition doesn't permit surgery. Radical radiotherapy can also cause incontinence, radiation proctitis, and induration of the prostate. Radiotherapy is given as palliative therapy for inoperable advanced prostatic cancer. Occasionally, bone secondaries may require palliative radiotherapy for pain.

3) **Hormonal therapy:** Useful in symptomatic metastatic prostatic cancer. Doesn't prolong life but provides relief from obstruction and pain. This can be achieved by:

- Bilateral orchiectomy, the commonest or by hormonal manipulation in this age.
- Estrogen tablets (Diethyl stilbesterol 3mg/day) to antagonise testosterone production.
- Antiandrogens like Flutamide.
- LHRH analogues — Goserelin, Leuprolide.

4) **Chemotherapy:** No definite role at present.

Therefore, a high index of suspicion is required in diagnosis of cancer prostate. Treatment is usually straightforward for early and advanced disease and the course of the disease is usually indolent. Careful followup after treatment and timely management of obstructive symptoms should be done.

Check Your Progress 4

1) What is the commonest symptom of bladder cancer?

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2) Enumerate the risk factors for bladder cancer?

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3) Mention the tumor markers used for diagnosing prostate cancer?

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- 4) Indicate True (T) or False (F):
- i) Prostate cancer affects young males. (T/F)
 - ii) Hormonal therapy is used to treat bladder cancer. (T/F)
 - iii) Bony spread is frequently seen in prostate cancer patient. (T/F)

2.6 CANCER OF BREAST

Breast cancer commonly afflicts women above the age of 50 years and is a disease seen in 1 out of 7 women in western countries. It is showing a rising incidence in India, mainly in cities like Bombay and Delhi. Breast cancer is the second most common cancer in Indian females, cancer of cervix being number one (described in unit 3 of this block). Early menarche, lesser pregnancies or nulliparity and urbanised lifestyle are known aetiological factors. The risk is high if mother and sister are affected by breast cancer.

2.6.1 Clinical Features

The most common symptom is a painless lump in the breast felt by the woman. However, by the time this is felt the lump is 2-3 cm in size. There can be associated swelling in the axilla (enlarged lymph node) or nipple retraction/discharge. Skin changes over the lump site in the form of dimpling or retraction can be noticed. When the breast cancer is advanced (which is often seen in India), there is a large mass in breast with skin fungation, fixation of mass to skin/underlying chest wall, multiple lymphnode in axilla/supraclavicular area inflammation of the whole breast, bone pain (due to metastasis) and liver/lung/other organ metastatic spread. In summary, the clinical findings are:

(1) lump in breast, (2) Nipple discharge/retraction, (3) Inflammation in breast, (4) Swelling in axilla, (5) Symptoms due to metastatic spreads to bone liver/lung, other organ sites.

A doctor should be careful to assess and record all these findings in a woman when breast cancer is suspected.

2.6.2 Investigations

The investigations for breast cancer are divided into two components : (a) screening for breast cancer (b) diagnostic test for breast cancer

- a) **Screening:** screening for breast cancer is commonly practiced in western countries. Some of these methods can be helpful in India. Women should be encouraged to follow these guidelines:
- 1) Breast self examination (BSE) in standing and lying down positions, above the age of 25 years, at least once ever month.
 - 2) Physical examination (PE) of the breasts by an experienced doctor between 20-40 years, at least every 3 years.
 - 3) A woman aged 50 years should undergo screening mammography at least for 3 times till age of 60 years.
 - 4) Woman who has mother, sister or other relative diagnosed with breast cancer should routinely undertake BSE and PE.
- b) **Diagnostic Tests:** The diagnostic tests for breast cancer are carried out carefully to understand the extend of the disease and plan out treatment strategies. The following tests are mandatory:
- 1) Physical examination by a doctor as outlined in clinical features,
 - 2) Fine needle aspiration cytology of lump in breast/axilla,
 - 3) Breast biopsy (if FNAC is not confirmatory),
 - 4) Chest Xray and ultrasound of abdomen.
- c) **Optional Tests**
- 1) Mammography of both breasts,

- 2) Radio-isotope Bone Scan,
- 3) Molecular markers and oncogenes.

2.6.3 Staging of Breast Cancer

A decision regarding the treatment is reached on the pathological diagnosis and stage. The most widely used staging system is the UICC/AJC cancer staging (1997) based on TNM categories.

This is explained below:

TNM staging system for breast cancer — 1997

I) Primary Tumour (T)

Definition: Classification of the primary tumour is the same for clinical and for pathologic classification.

- TX Primary tumour can not be assessed
- T0 No evidence of primary tumour
- Tis Carcinoma in situ : Intraductal carcinoma, lobular carcinoma in situ, or Paget's disease of the nipple with no tumour (Paget's disease with a tumour is classified according to the size of the tumour.)
- T1 Tumour 2.0 cm or less in greatest dimension
 - TIa 0.5 cm or less
 - TIb > 0.5 cm, but not > 1.0 cm
 - TIc > 1.0 cm, but not >2.0 cm
- T2 Tumour >2.0 cm, but not >5.0 cm in greatest dimension
- T3 Tumour > 5.0 cm in greatest dimension
- T4 Tumour of any size with direct extension to chest wall or skin
 - T4a Extension to chest wall
 - T4b Edema (including peau d' orange) or ulceration of the skin of the breast or satellite skin nodules confined to the same breast.
 - T4c Both T4a and T4b
 - T4d Inflammatory carcinoma (diffuse brawny induration of the skin of the breast with an erysipeloid edge, usually without an underlying palpable mass).

II) Regional Lymph Nodes (N)

- NX Regional nodes cannot be assessed (e.g., previously removed or no information on them can be obtained)
- NO No metastases
- N1 Metastases in movable ipsilateral axillary lymph node(s)
- N2 Metastases in ipsilateral axillary lymph node(s) fixed to each other or to other structures
- N3 Metastases to ipsilateral internal mammary lymph node(s)

III) Distant Metastasis (M)

- MX Cannot be assessed
- MO None
- M1 Distant metastasis present (includes metastasis to Histopathologic grade (G))

Stage	0	Tis	NO	MO
Stage	I	T1	NO	MO
Stage	IIA	T0	N1	MO
		T1	N1	MO
		T2	NO	MO
Stage	IIB	T2	N1	MO
		T3	NO	MO
Stage	IIIA	T0	N2	MO
		T1	N2	MO
		T2	N2	MO
		T3	N1	MO
Stage	IIIB	T3	N2	MO
		T4	N (any)	MO
Stage	IV	T (any)	N3	MO
		T (any)	N (any)	M1

Further, for the broad management and treatment results purposes, the stages are divided into three types:

- 1) Early breast cancer (EBC) — Stage 0, I, II
- 2) Locally advanced breast cancer (LABC) — Stage III
- 3) Metastatic breast cancer (MBC) — Stage IV

2.6.4 Treatment and Results

EBC: In women who have tumour size less than 4 cm and no axillary node palpable, breast conserving therapy (BCT) is advocated. The surgery in BCT is done as lumpectomy and this followed by radiation therapy to whole breast, with or without irradiation to ipsilateral axilla. Patients who have larger lump, axillary nodes and/or do not agree for BCT should undergo standard mastectomy and adjuvant postoperative radiotherapy. Chemotherapy is indicated for patients with tumour size >1cm and/or node positive status. The standard first-lines regimens can be—CMF (cyclophosphamide, methotrexate, 50fluorouracil) or, FAC (5-fluorouracil, adriamycin, cyclophosphamide). Adjuvant hormone therapy, currently recommended drug is tamoxifen—a monosteroidal anti-oestrogen, is given to estrogen-receptor status positive women and postmenopausal women. The 5-year survival for stage I is 80% and it is above 60% for stage II, with properly selected treatments.

LABC: Multimodality therapy consisting of surgery, chemotherapy, radiation therapy and often combined with tamoxifen, is now the standard of care in LABC. In India, of all breast cancer patients around 50% present in this stage. Obviously such multi-modal practice will be costly and will require long treatment course. Patient's compliance is necessary. Resectable patients are treated by modified radical mastectomy first, followed by adjuvant chemotherapy and postoperative locoregional radiotherapy (LRRT). LRRT is needed for improving the locoregional control and overall survival. On the other hand, those patients who are considered as advanced and inoperable in the beginning will be given induction chemotherapy—usually 2-3 cycles of FAC regimen. Approximately 50-70% of the patients become operable after induction chemotherapy. After surgery is performed, the patient is delivered postop LRRT and then followed by further chemotherapy and hormonotherapy. A close follow up, at least at 3 months interval, is essential, since more than 50% of treated patients are likely to develop locoregional recurrence or distant metastasis. The overall 5 year survival for LABC ranges 35-50%.

MBC: The treatment for metastatic cancer is individualized. The metastasis usually involves supraclavicular nodes, bones, liver, lungs and CNS. When a patient has locoregional tumour

burden (breast lump less than 7 cm, few axillary lymphnodes) along with one or two metastatic sites, the likely prognosis is good and survival is around 2 years. Otherwise for those with widespread disease, the average survival is less than 1 year. In general the treatment will consist of surgery as toilet mastectomy. Radiation therapy is delivered to the breast tumor and lymphnode regions with palliative intent. Chemotherapy and hormone therapy are added, if the patient's general health status permits. Chemo-hormone therapy are likely to show response in 15-20% of these patients and improve the quality of life. However, it requires careful decision making so that the patient does not suffer from adverse chemotherapy-related toxicities.

Check Your Progress 5

- 1) Describe the clinical findings in breast cancer
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.....
.....
- 2) For the purpose of treatment, the stages of breast cancer are divided into three types:
 - i) EBC, LABC, MBC
 - ii) Stage 0, Stage III, Stage IV
- 3) Indicate True (T) or False (F):
 - i) BCT is chosen for a willing woman with EBC. (T/F)
 - ii) Breast self examination carried out by the physician. (T/F)
 - iii) Induction chemotherapy followed by surgery is a treatment approach in LABC. (T/F)
 - iv) 5-year survival for stage II Breast Cancer is 30%. (T/F)
 - v) Hormone therapy (Tamoxifen) is commonly given in stage IV breast cancer. (T/F)
 - vi) Breast cancer is the second most common cancer in Indian women. (T/F)

2.7 SCREENING AND IDENTIFICATION OF A HIGH RISK PATIENT

An adequate history, a complete physical examination and certain simple tests are required to identify early cases of cancer and identify a high risk group for further investigation and careful followup. A family history of cancer, associated habits like smoking, tobacco chewing, occupational exposure to carcinogens should be asked for.

The basic examination should include:

General physical examination and a record of medical history.

Examination of the oral cavity to look for leucoplakia or cancer

In females: Breast and pervaginal examination for detection of breast and cervical cancers.

Males: Per rectal examination for detection of rectal or prostatic cancer.

Investigations: Currently, there are no clear guidelines for screening in the elderly in India.

After 50 years of age the following investigations should be done as a baseline whenever the patient comes to you:

- Chest X-ray PA view
- Fecal occult blood examination
- Females: Bilateral mammogram and pap smear.

Women should have an annual mammogram after the age 50 and a pelvic examination and pap smear yearly. Stool testing for occult blood should be done for all patients on an annual basis.

2.8 LET US SUM UP

Cancers in the elderly present a special clinical and management problem because most of these present late and with non classical presenting features. The treatment often has to be tailored to the individual patient depending on the performance status. As the primary physician, a high index of suspicion is required to identify these patients early and refer them to a regional cancer center where multimodality treatment can be offered. Since the primary treating doctor has the best rapport with the patient, you may have to allay their apprehensions regarding the disease and treatment. After treatment, you will play an important part in the followup of these patients to help in early detection of recurrences and rehabilitation of these patients.

2.9 KEY WORDS

Leucoplakia : whitish patches in mouth. It is a premalignant condition.

Screening : the search for unrecognised disease or defect by means of rapidly applied tests, examinations or other procedures in apparently healthy individuals.

2.10 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

- 1) The common symptoms of lung cancer are: cough and hemoptysis. Dyspnoea and hoarseness are more commonly found in advanced lung cancer.
- 2) A coin lesion is the commonest radiological finding in lung cancer.
- 3) The commonly performed surgeries for lung cancer are—pneumonectomy and lobectomy.
- 4)
 - i) F
 - ii) F
 - iii) T

Check Your Progress 2

- 1) In a patient with this history, carcinoma tongue should be a likely diagnosis. You must take a detailed history, examine the lesion and record the size, site and induration. Palpate the neck for nodes. A biopsy should be done to confirm the diagnosis. Other investigations needed are: hemogram, liver function tests, Chest X-ray and ECG. These will help in the management.
- 2) The common management modalities for head and neck cancer are surgery and radiotherapy. Surgery and Radio Therapy can be used as single modality for early cancer but combined modality treatment is required in locally advanced cancer.
- 3) The risk factors for oral cancer are Spirits, Smoking, Spices, Sharp teeth, and syphilis.
- 4)
 - i) T
 - ii) F
 - iii) T

Check Your Progress 3

- 1) The modalities of dysphagia relief in esophagia cancer are: Laser luminisation, Endoscopic stent placement, Radiotherapy, Chemotherapy:
- 2) The clinical signs suggesting inoperability in carcinoma stomach are:
Palpable abdominal mass, Severe anaemia, Significant weight loss (more than 10% of the total body weight)

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- 3) This patient requires a detailed history and general physical examination. A gentle per rectal examination followed by a proctoscopy should be done to look for local causes of bleeding like piles. If no primary is located, then a sigmoidoscopy should be planned to localise the site of bleed. A sigmoidoscopy also helps in taking biopsy from a suspicious site after visualisation.
- 4) i) T
ii) F
iii) F

Check Your Progress 4

- 1) The commonest presenting feature of carcinoma bladder is hematuria.
- 2) The risk factors for cancer are Dye exposure, smoking, pelvic irradiation, Chemotherapy using cyclophosphamide, Shistosoms haematobium infection, bladder stones.
- 3) The tumour markers used for diagnosing prostate cancer are: Prostate specific antigen (PSA), Acid phosphatase
- 4) i) F
ii) F
iii) T

Check Your Progress 5

- 1) Lump in breast, lymph nodes in axilla, nipple discharge, skin ulceration, skin dimpling are the common presenting features of breast cancer.
- 2) EBC, LABC, MBC
- 3) i) T
ii) F
iii) T
iv) F
v) T
vi) T

2.11 FURTHER READINGS

Martin D. Abeloff *et al.* (1995), *Clinical Oncology*, 2nd edn., Churchill Livingstone Inc.

Vincent DeVita Jr (1993), *Principles and Practice of Oncology*, 4th edn., J.B.Lippincot Company, Philadelphia.