Oncology Newsletter

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Woman's day celebration– saluting the essence of human life

Woman's day celebrations was marked with a rally which was well attended and was followed by a quiz on cancer and other cultural events and competitions. All the events were well appreciated by the crowd.

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THE PARADIGM SHIFT- Dr Rajkumar

Case 1

63/MALE presented with low back acke & found to have *MULIPLE BONE METS on whole spine MRI , underwent* COLONOSCOPY – showing ANAL VERGE POLP, UPPER GI SCOPY – showing ANTRAL GASTRITIS , SERUM PSA- 10.59. Colonoscopy guided biopsy showed Tubular Adenoma with Focal High Grade Dysplasia. Bone Biopsy from the Rt Iliac Crest showed Atypical Cell Clusters suggestive of Metastatic Adenocarcinoma. PET- CT showed significant uptake in the ant. Basal segment of Lt. Lower lobe of Lung with significant uptake in the Lt hilar lymph node and muliple Bone uptake.

Diagnostic dilemma---- Is it CA Prostate with bone secondaries/ Lung Secondaries or CA lung with Bone Secondaries or CA Colorectum with Secondaries?

Case 2

64/ MALE a CHRONIC ALCHOLIC evaluated with MRI abdomen found to have

CA HEAD OF PANCREAS - SMV ENGULFEMENT , PERIPANCREATIC NODES underwent CT guided biosy . Reported as possibilites are 1. Adenocarcinoma, 2. Chronic Pancreatitis.

Diagnostic dilemma---- Is it a Benign or a malignant condition ?.

Do the Patient needs repeat Biopsy or an IHC ?? --- inordinate delay in starting the treatment--

ONCOLOGIST NIGHTMARE !!!

No more with the PRECISION ONCOLOGY TOOL-- “ LIQUID BIOPSY “ the PARADIGM SHIFT in Oncology.

Introduction

Biopsies have been used by clinicians to diagnose and manage disease for 1,000 years. But there are many difficulties in obtaining a tissue biopsy—including the discomfort suffered by the patient, inherent clinical risks to the patient, potential surgical complications and economic considerations—meaning that multiple or serial biopsies are often impractical. In addition, some tumours are not accessible for biopsy . Under representation of the heterogeneity of a tumour and poor sample availability means tissue biopsies are of limited value for the assessment of tumour dynamics in the advanced stages of disease . Extended periods between sampling and clinical application of the results, as well as additional lines of treatment between sampling, might result in an altered genetic composition of the tumour .

Liquid biopsy is a liquid biomarker that can be isolated from body fluids, such as blood, saliva, urine, ascites, or pleural effusion. Like a tissue biopsy, it is arepresentative of the tissue from which it has spread.

Term “Liquid biopsy” stands for: Circulating tumor cells (CTCs), Cell-free DNA (cfDNA) or Exosomes. “ CTC “are the cancer cells released from primary tumor mass into the bloodstream. Circulating free DNA can be extracted from the blood and tumour-specific aberrations assessed to provide a genetic landscape of the cancerous lesions in a patient .Tracking tumour-associated genetic aberrations in the blood can be used to assess the presence of residual disease, recurrence, relapse and resistance. Monitoring the emergence of tumour-associated genetic aberrations in the blood can be used to detect the emergence of resistant cancer cells 5–10 months before conventional methods.

CURRENT TECHNOLOGIES TO DETECT, CAPTURE, AND ISOLATE CTCS

Based on antibodies: EpCAM, cytokeratins (CK8, CK18, CK19), CD45-negative. Examples include CellSearch.

Based on transcripts: Rely on transcripts, performed on the total RNA extracted from blood by RT-PCR. Examples include AdnaTest BreastCancerDetect.

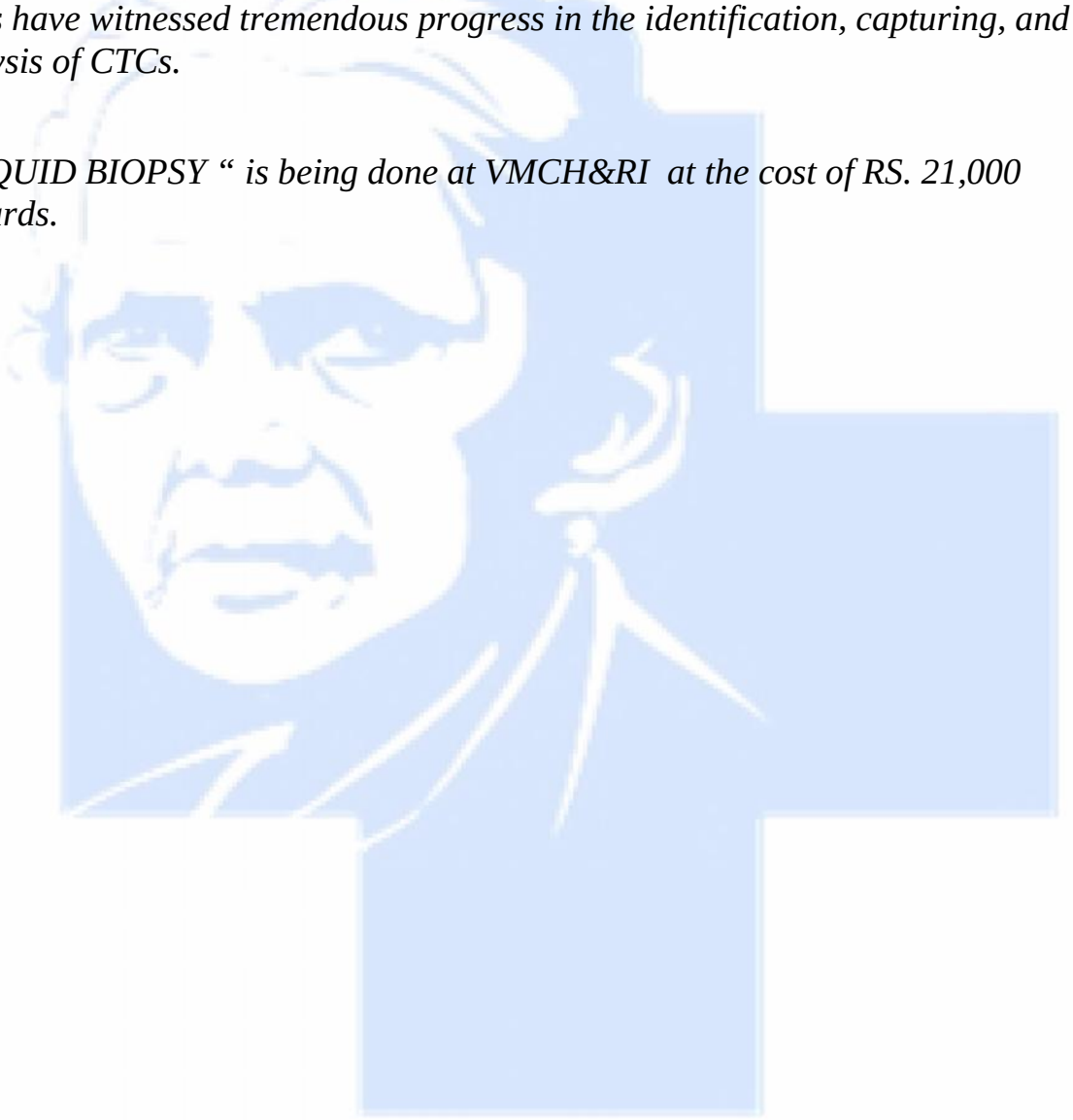
Based on functions: Protein-based assays such as the EPISPOT (Epithelial ImmunoSPOT) assay

Whole-genome amplifications: Single-cell studies targeting CTC heterogeneity, or pooling CTCs to study the whole tumor cell population

CONCLUSION :

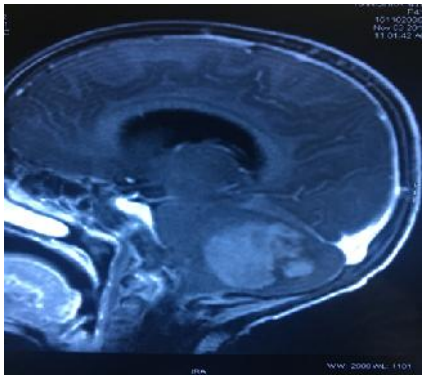
Both CTCs and ctDNA provide snapshots of genomic alterations in primary tumors and metastases at various stages during the course of disease. Recent years have witnessed tremendous progress in the identification, capturing, and analysis of CTCs.

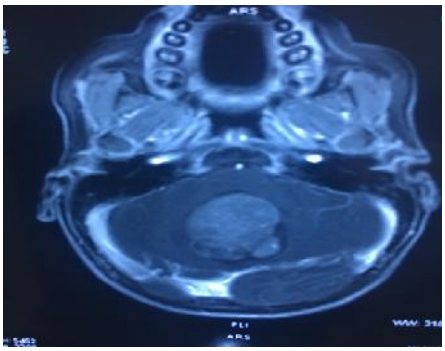
“ LIQUID BIOPSY “ is being done at VMCH&RI at the cost of RS. 21,000 onwards.

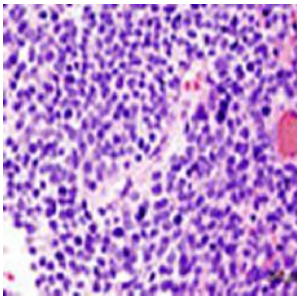


CSI(Cranio-Spinal Irradiation) in Meduloblastoma- DrSugashwaran

Medulloblastoma (MB) is a highly malignant neuroepithelial tumour of the posterior fossa classified WHO IV. MB is mainly a pediatric brain tumour that account for 10% of all intracranial neoplasms and 29% of all pediatric fossa tumours in children, whereas they represent less than 1% of CNS adult neoplasms.Medulloblastomas are known to spread by CSF pathways. It caused by CSF seeding occurred mainly in spinal canal due to predominantly downward flow of CSF from cisterna magna.The treatment strategy for these patients which includes postoperative craniospinal irradiation followed by chemotherapy. We share our experience with a 4yr old child diagnosed as Meduloblastoma Grade IV following craniotomy and complete tumour resection by Dr Santhanakrishnan, Senior Consultant Neurosurgeon, VMCH&RI.

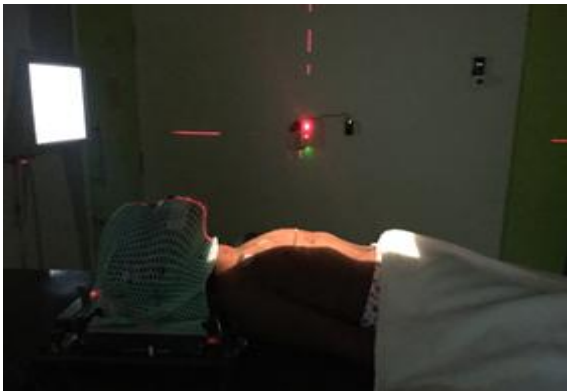






The patient receivedPHASE I : 23.4GY IN 13 FRACTIONS to cranio spinal irradiation followed by PHASE II : 30.4 GY IN 17 FRACTIONS to posterior fossa and now on adjuvant chemotherapy.

Challenges faced during treatment included Patient positioning and sedation, Pancytopenia related to treatment, Personality issues relating to hair loss, and skin discolouration, We were able to manage all these issues with close monitoring and timely interventions.

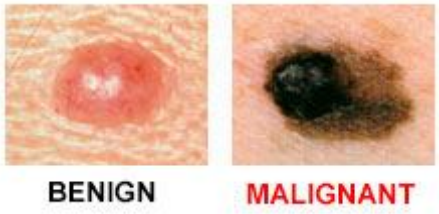


Malignanat Melanoma- Dr ShivaKumar

The most dangerous form of skin cancer. These tumors originate in the pigment-producing melanocytes in the basal layer of the epidermis. Melanomas often resemble moles; some develop from moles. The majority of melanomas are black or brown, but they can also be skin-colored, pink, red, purple, blue or white. Melanoma is caused mainly by intense, occasional UV exposure (frequently leading to sunburn), especially in those who are genetically predisposed to the disease.

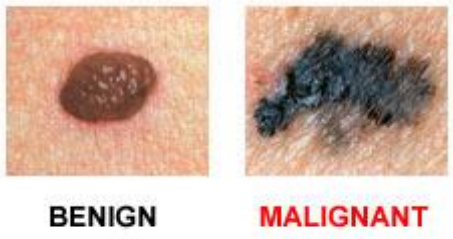
If melanoma is recognized and treated early, it is almost always curable, but if it is not, the cancer can advance and spread to other parts of the body, where it becomes hard to treat and can be fatal. That's why it's so important to get to know the skin lesions very well and to recognize any changes in the moles. Look for the ABCDE signs of melanoma

A. Asymetry



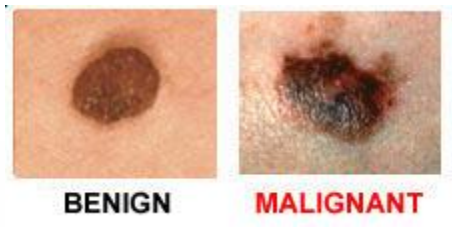
The benign mole, left, is not asymmetrical. If you draw a line through the middle, the two sides will match, meaning it is **symmetrical**. If you draw a line through the mole on the right,, the two halves will not match, meaning it is **asymmetrical**, a warning sign for melanoma.

B. Border



A benign mole has smooth, even **borders**, unlike melanomas. The **borders** of an early melanoma tend to be uneven. The edges may be scalloped or notched.

C Colour

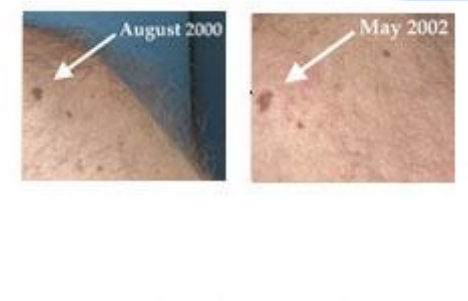


Most benign moles are all one **color** — often a single shade of brown. Having a variety of **colors** is another warning signal. A number of different shades of brown, tan or black could appear. A melanoma may also become red, white or blue.

D Diameter

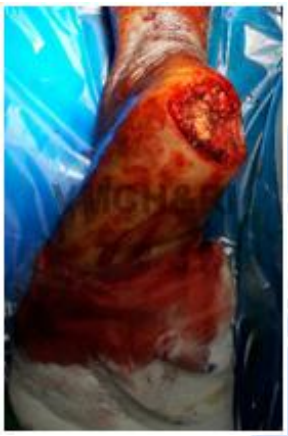
Benign moles usually have a **smaller diameter** than malignant ones. Melanomas usually are larger in **diameter** than the eraser on your pencil tip (¼ inch or 6mm), but they may sometimes be smaller when first detected.

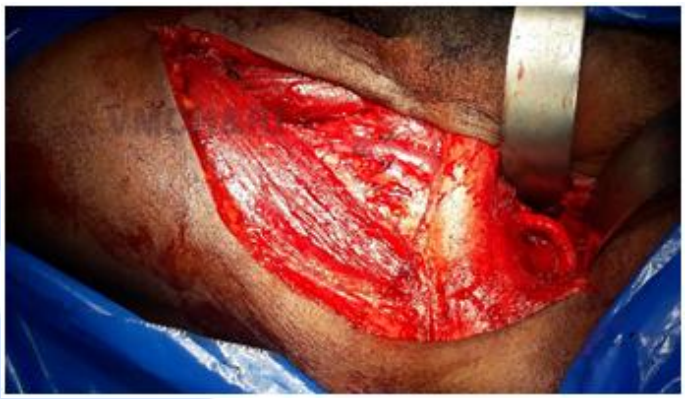
E Evolving



Common, benign moles **look the same** over time. Be on the alert when a mole starts to **evolve or change** in any way. When a mole is **evolving**, see a doctor. Any change — in size, shape, color, elevation, or another trait, or any new symptom such as bleeding, itching or crusting — points to danger.

When diagnosed on a timely manner melanomas can be treated aggressively to achieve cure. Following are pictures of one of our patients undergoing aggressive surgical treatment with Wide Local Excision and Ileo-Inguinal block dissection for melanoma.





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