REASONS FOR ASSESSMENT OF TISSUE

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The contributions that tissue analysis makes to clinical - management include diagnosis, staging, prediction of outcome and assistance with selection of therapy . These are often - interrelated. The process of tissue assessment may make a new diagnosis or may confirm or refute a suspected or existing clinical diagnosis. There may be pointers towards a cause. Analysis may also reveal additional diagnoses that may be unsuspected. As an example, pathological assessment of an appendicec - tomy specimen most often confirms a suspected clinical diag - - nosis of acute appendicitis. However, the appendix sometimes contains an incidental neuroendocrine neoplasm, mucinous contains granulomas, raising the possibility of Crohn’s disease or infection. Also, a specific cause of abdominal pain other than appendicitis, e.g. endometriosis, may be apparent in the appendiceal tissue. Absence of any histological abnormality raises the possibility of an extra-appendiceal cause. Similarly , biopsies from a patient with inflammatory bowel disease may confirm the diagnosis but may sometimes reveal or suggest an alternative cause of intestinal inflammation such as tuberculo sis, amoebiasis, ischaemia or mucosal prolapse. Summary box 11.1 Reasons for analysis of tissue /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF Tissue analysis also helps, increasingly , to determine or refine treatment and prognosis. For example, the assessment of a breast, lung, colorectal or other major cancer resection spec imen helps to confirms the diagnosis but, more importantly , provides crucial information about features such as tumour stage, vascular invasion, perineural invasion and resection mar gin involv ement, which in turn help to predict clinical outcome and determine postoperative treatment. The degree of tumour regression in a resection after neoadjuvant therapy may also have prognostic value. Additionally , pathological assessment of resections helps surgeons and radiologists to audit their accu racy and performance. Molecular pathological analysis of cancer tissue (see Diagnostic molecular pathology) increasingly contributes to management, including diagnostic categorisation, prognos tic predictions and selection of drug therapy . The molecular test or group of tests that an oncologist chooses depends on patient status, tumour location, tumour morphology and stage, among other factors. The identification of a particular bio marker may provide an indication for targeted therapy . For example, detection of high microsatellite instability (MSI) in metastatic colorectal carcinoma (CRC) may predict respon siveness to immune checkpoint inhibition. Burrill Bernard Crohn , 1884–1983, gastroenterologist, Mount Sinai Hospital, New Y ork, NY , USA. Norman Rupert Barrett , 1903–1979, surgeon, St Thomas’s Hospital, London, UK. patient. Correlation with the clinical picture and the macro - scopic findings enhances the interpretation of pathological changes considerably . Ther efore, absence of relevant details may cause unnecessary delays and even er rors. For example, radiation therapy can have profound e ff ects on tissue morphol - ogy , including mimicry of other inflammatory conditions or neoplasia. Accordingly , a request form with adequate informa - - tion

should accompany all specimens. Examples of important details include site of biopsy/resection, clinical setting, reasons for the procedure, patient details, medications, relevant risk factors and past medical and surgical history , including pre - vious chemotherapy and radiotherapy . A request form stating ‘cancer’ or ‘Crohn’s’ is better than a form with no details but is clearly not su ffi cient. For small and large resection specimens, good quality mac - roscopic assessment and sampling is an important precursor to microscopic assessment (see Specimen processing).

Diagnosis Con /f_i rmation/rejection of a clinical diagnosis Additional diagnoses Classi /f_i cation of neoplasia Classi /f_i cation of non-neoplastic disease Staging of malignancy Prognosis Management Selection of therapy Assessment of response to treatment Cancer screening programmes and related programmes Cervical, bowel, breast, in /f_l ammatory bowel disease, Barrett’s oesophagus Clinical trial support Audit

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