92.85%. The diagnostic accuracy of the staining was 85.93% for galectin-3, 86.15% for HBME-1 and 87.50% for both markers.

Conclusion: Galectin-3 and HBME-1 have an excellent sensitivity and specificity for malignant thyroid lesions. Combining these markers could increase sensitivity and could be useful as an adjunct to distinguish benign from malignant thyroid lesion.

16. THE ROLE OF PCR ON DIAGNOSIS OF SMALL B-CELL NON-HODGKIN LYMPHOMA

Ery Kus Dwianingsih, Ester Lianawati Antoro, Indrawati, F.X. Ediat Triningsih, Harijadi

Department of Anatomical Pathology, Faculty of Medicine, Universitas Gadjah Mada, Yogyakarta, Indonesia

Small B-cell non-Hodgkin lymphoma (NHL) is difficult to be distinguished from non-neoplastic reactive process using conventional haematoxylin and eosin (H&E) staining due to different interpretation among pathologists to diagnose based on morphologic features. Ancillary examination such as immunohistochemical (IHC) staining is essential to be conducted. However, a negative or doubtful result is sometimes obtained due to unsatisfying tissue processing or IHC technique. Polymerase chain reaction (PCR) as a molecular diagnostic technique is very sensitive and specific. Clonality detection of heavy chain immunoglobulin (IgH) gene rearrangement has been widely used to establish diagnosis of B-cell NHL.

Aims: To elaborate interobserver variation in small B-cell NHL diagnosis based on morphologic features only and to confirm sensitivity and specificity of PCR technique as an ancillary method.

Methods: The 28 samples of small B cell NHL and suspicious lymphoma were interpreted by 3 pathologists in Sardjito General Hospital based on their morphology only. The reliability of assessment and the coefficient of interobserver agreement were calculated by Fleiss kappa statistic. Interpretation results were confirmed with IHC staining (CD20, CD3, Bcl2). PCR was performed to analyze the clonality of IgH gene rearrangement.

Results: Interobserver agreement in morphologic evaluation of small B cell NHL and chronic lymphadenitis revealed kappa coefficient 0.69 included in substantial agreement category. The cases were divided into 3 groups based on morphology and IHC result; lymphoma, reactive process; and undetermined group. PCR analysis showed 90% sensitivity and 60% specificity.

Conclusions: The present study reveals a substantial agreement among pathologists on small B-cell NHL diagnosis. On difficult cases, PCR is useful as a complementary method for morphologic and IHC examinations to establish definitive diagnosis.

17. EVALUATION OF THE ROLE OF IMMUNOHISTOCHEMICAL EXPRESSION OF EGFR (ERB B1) AND HER4 (ERB B4) IN URINARY BLADDER UROTHELIAL CARCINOMA

Nafissa El Badadawy, Nermeen Youssef, Amira Ismail, Faten Ragheb, Sara Hakim

Department of Pathology, Faculty of Medicine, Ain Shams University, Egypt

Background: EGFR (ERB B1) and HER4 (ERB B4) are members of the ERB B family of receptors. Overexpression of ERB B receptors has both prognostic and therapeutic significance in various malignancies including breast, colorectal, prostate and ovarian cancer. However, the prognostic significance of their expression in urothelial carcinoma remains controversial. The aim of this work is to evaluate the prognostic value of EGFR and HER4 in urothelial carcinoma of urinary bladder.

Methods: Fifty archived cases of urothelial bladder carcinoma, cases of which had synchronous metastatic lesions in lymph nodes, as well as 13 samples of normal ureters were studied by immunostaining for EGFR and HER4.

Results: Membranous EGFR, cytoplasmic HER4 and nuclear HER4 expression were detected in 74%, 46% and 32% of urothelial carcinoma respectively and 15.4%, 100% and 0% of normal ureteric samples, respectively, with statistically significant differences between the two groups regarding the expression of both markers ($p < 0.05$). Membranous EGFR as well as nuclear HER4 expression showed statistically significant association with non-papillary tumors, high histologic grade and advanced tumor stage ($p < 0.05$). There was a highly statistically significant inverse relationship between cytoplasmic and nuclear HER4 expression ($p = 0.0001$) as well as between EGFR and cytoplasmic HER4 expression ($p = 0.001$). There was no statistically significant association between EGFR and nuclear HER4 expression ($p = 0.051$).

Conclusion: EGFR and nuclear HER4 expressions were associated with parameters of poor prognosis in urothelial carcinoma while cytoplasmic HER4 expression was related to good prognostic indicators. Both markers may help in selecting high-risk patients for more aggressive therapy.

18. HISTOPATHOLOGIC AND SIASCOPIC CORRELATION OF PIGMENTED SKIN LESIONS IN RURAL NSW: A TWO YEAR PROSPECTIVE STUDY

Sujatha Fernando¹, Fong Seen Koh¹, Anna Durie¹, Anne Gilroy²

¹Southern IML, and ²University of Western Sydney, Australia

A prospective study was undertaken in collaboration with primary care physicians from skin clinics in rural New South Wales, which included Orange, Bathurst, Kelso and Illawong. Pigmented skin lesions, thought to be suspicious of atypical naevomelanocytic lesions, were subjected to spectrophotometric intracutaneous analysis (SIA) prior to excisional biopsy and histopathologic examination.

The simple, highly reproducible features, such as dermal melanin, collagen holes and 'erythematous blush' with blood displacement, found to be specific for melanoma by a previous study by Moncrieff *et al.*¹ in the United Kingdom was used by us. Analysis of our study over a period of two years is compared with the previous study by Moncrieff *et al.*¹

Our results show that of 1014 pigmented skin lesions examined, 756 cases were identified as naevomelanocytic, with 449 dysplastic and 10 cases of melanoma. Of the non-melanocytic lesions, the most common, clinically misdiagnosed for atypical naevomelanocytic lesions, were seborrheic keratoses, similar to the UK study.

Reference

1. Moncrieff M, Cotton S, Claridge E, Hall P. Spectrophotometric intracutaneous analysis; a new technique for imaging pigmented skin lesions. *Br J Dermatol* 2002; 146: 448–57.

19. GENETIC DISSIMILARITY BETWEEN PRIMARY COLORECTAL CARCINOMA AND THEIR LYMPH NODE METASTASES: PLOIDY, P53, BCL-2 AND C-MYC EXPRESSION

Abd AlRahman Mohammad Foda¹, Khaled Refaat Zalata¹, Mohamed Farouk Elshal²

¹Pathology Department, Faculty of Medicine, Mansoura University, and ²Molecular Biology Department, Genetic Engineering and Biotechnology Institute, Sadat City University, Egypt

Introduction: The current paradigm of colorectal carcinoma (CRC) metastasis proposes that rare cells within primary tumors acquire metastatic capability via sequential mutations, suggesting that metastases are genetically dissimilar from their primary tumors. Greater understanding of the metastatic phenotype from cellular and molecular analyses will provide a rational approach for controlling CRC.

Objectives: Our goal was to compare aneuploidy, the expression of p53, Bcl-2 and c-myc in primary CRC and their corresponding LN metastases from the same patients.

Methods: Thirty-six primary CRCs and their corresponding LN metastases were studied. All clinicopathological data of the cases were revised with re-examination of all their slides. DNA flow cytometry and immunostaining of p53, Bcl-2 and c-myc were carried out on the primary tumors and their corresponding LN metastases.

Results: It was found that there is very low probability that the histological patterns of primary tumors and LN metastases are independent. Metastatic tumors were significantly more diffusely positive for p53 than the primary tumors. The reverse was true for c-myc expression. No significant difference was found between the LNs and the primary tumors in Bcl-2 positivity and DNA aneuploidy, with a tendency towards negative bcl2 and less aneuploidy in LN metastases than primary tumors.

Conclusion: LN metastatic colorectal carcinoma have a tendency of being less differentiated, with a higher incidence of diffuse p53 staining, lower incidence of bcl-2 staining and less aneuploidy in comparison to their primary counterparts, suggesting a more aggressive biological behavior, which could indicate the necessity for more aggressive adjuvant therapy.

20. ABERRANT EXPRESSION OF C-KIT AND DOG-1 IN MUCINOUS AND NON-MUCINOUS COLORECTAL CARCINOMAS AND RELATION TO CLINICOPATHOLOGICAL FEATURES AND PROGNOSIS

Abd Al-Rahman Mohammad Foda, Mie Ali Mohammad
Pathology Department, Faculty of medicine, Mansoura University, Egypt

Introduction: c-KIT and DOG-1 are two highly-expressed proteins in gastrointestinal stromal tumors. It is now well known

that some genes and proteins are aberrantly expressed in colorectal carcinoma (CRC) with relations to prognosis. To the best of our knowledge, c-KIT and DOG-1 were not investigated in large number of CRC cases.

Objectives: This study aims to investigate expression of c-KIT and DOG-1 in colorectal mucinous adenocarcinoma (MA) and non-mucinous adenocarcinoma (NMA).

Methods: We studied tumor tissue specimens from 150 patients with colorectal mucinous (MA) and non-mucinous adenocarcinoma (NMA). High density manual tissue microarrays were constructed using modified mechanical pencil tips technique and immunohistochemistry for c-KIT and DOG-1 was done.

Results: Aberrant c-KIT expression was detected in 12 cases (8%); 6 cases (4%) showed strong expression. Aberrant DOG-1 expression was detected in 15 cases (10%) among them only 4 cases (2.7%) showed strong expression. NMA showed a significantly higher expression of c-KIT, but not DOG-1, than MA. Aberrant c-KIT and DOG-1 expressions were significantly unrelated. All 6 cases (100%) that showed strong c-KIT expression were DOG-1 negative. Similarly, 3 cases that showed strong DOG-1 expression were totally negative for c-KIT, only one case with strong DOG-1 expression showed weak c-KIT expression. c-KIT and DOG-1 expressions were associated with excessive microscopic abscess formation. Neither c-KIT nor DOG-1 expression showed a significant impact on disease-free or overall survival.

Conclusion: Aberrant c-KIT and DOG-1 expression in CRC is a rare event, either in NMA or MA. So, c-KIT and DOG-1 immunostaining is not a cost-effective method of identifying patients with CRC who may benefit from treatment with tyrosine kinase inhibitors.

21. MUCINOUS COLORECTAL ADENOCARCINOMA: RELATION OF GLYPICAN-3 AND E-CADHERIN EXPRESSIONS TO CLINICOPATHOLOGICAL FEATURES AND PROGNOSIS

Abd Al-Rahman Mohammad Foda, Mie Ali Mohammad, Azza Abdel-Aziz, Amira Kamal El-Hawary
Pathology Department, Faculty of Medicine, Mansoura University, Egypt

Introduction: Glypican-3 (GPC3) is a member of the membrane-bound heparin sulfate proteoglycans. E-cadherin is an adhesive receptor that is believed to act as a tumor suppressor gene. Many studies had investigated E-cadherin expression in colorectal carcinoma (CRC) while only one study had investigated GPC3 expression in CRC.

Objectives: This study aims to investigate expression of GPC3 and E-cadherin in colorectal mucinous (MA) and non-mucinous adenocarcinoma (NMA) using manual tissue microarray technique.

Methods: We studied tumor tissue specimens from 150 patients with colorectal mucinous (MA) and non-mucinous adenocarcinoma (NMA). High density manual tissue microarrays were constructed using modified mechanical pencil tips technique and immunohistochemistry for GPC3 and E-cadherin was done. All relations were analyzed using established statistical methodologies.

Results: NMA showed a significantly higher E-cadherin expression than MA. However NMA also showed higher expression of GPC3 than MA, this was not statistically