SUMMARY

soft tissue sarcomas appear in different guises and can mimic various reactive soft tissue lesions and epithelial neoplasm thus there is a need for accurate histological diagnosis. Many sarcomas are too poorly differentiated (undifferentiated) to exhibit morphological feature specifiec enough to define their histogensis or true origin .

So that accurate identification by morphological criteria alone is limited. Histochemical stain and immunohistochemical techniques may help to reduce the size of this category .

In this work and besides the routine light microscope, we used a combination of histochemical stain confirmed by immunohistochemical stains to improve accuracy of diagnosis . Also this study aims at evalution of the proliferative activity of different soft tissue sarcomas lesions by silver – stained nucleolor organizer regions which correlate their results with histological type and grade .

In this study, 50 biopsy specimens of soft tissue sarcomas received at Pathology Department , Benha University and Histopathology Department of National Cancer Institute in Cairo in three years periods from November 1995 to December 1998 were used .

Specimens were – re – cut, stained using hematoxylin and Eosin (H & E stain) . Special stains were resorted to Gorden and Sweets for reticulin, Masson trichrome stain for myofibrils and collagen, periodic acid Schiff stain for glycogen and mucoproteins .

Alcian blue stain for acid mucopolysaccharides, silver staining techniques for evaluation of AgNORs count and pattern, immunohistochemical staining using : Vimentin for mesenchymal differentiation, alpha-1- antitrypsin as a histocytic marker , desmin , for muscle differentiation , alpha-1- smooth muscle actin , a smooth muscle marker to differentiate between skeletal and smooth muscle .

The different types of soft tissue sarcomas were categorized according to their histopathological features. 7 cases were liposarcomas (2 myxoid, one round cell , two well differentiated and two pleomorphic), 8 cases fibrosaraomas (3 well differentiated , 2 moderate differentiated , 3 poorly differentiated), 7 M.F.H. (5 storiform pleomorphic and 2 myxoid), 10 cases leiomyosarcomas (5 well differentiated , 5 poorly differentiated) , 5 rhabdomyosarcomas (3 embryonal and 2 alveolar) and 13 cases of undifferentiated sarcomas , analyzed by a panel of histochemical and immunohistochemical stains .

The AgNORs count correlate significantly and increased gradually with progression of the grade . The mean number of AgNORs / nucleus was (1.1 / nucleus ± 0.1) in control group , (4.78 / nucleus ± 0.38) in low grade cases ; (5.89 / nucleus ± 0.78) in intermediate grade ; (8.52 / nucleus ± 1.17) in high grade and (9.35 / nucleus ± 0.33) in undifferentiated cases .

As regards the AgNORs size and distribution pattern there were differences between normal cells and malignant cells . Round , uniform and has regular sized and shape in normal cells . While the malignant cells were characterized by irregular scattered distribution of NORs and pleomorphic in size and shape .

The immunohistochemical markers revealed that : Vimentin marks all connective tissue cells (classified and unclassified) . Alpha-1- antitrypsin marked all cases of M.F.H. and cases 6,7 and 8 of unclassified cases . Desmin marked all cases of both leiomyosarcomas and rhabdomyosarcomas and cases 9,10,11,12 and 13 of unclassified sarcomas. Two cases (1 and 4) of unclassified cases still undiagnosed .

CONCLUSION

From the material investigated and after analysis of results one can conclude the following :

The histopathological study of sarcomas by routine light microscopy may be useful in diagnosis of its type, grade and also may identify its biological behavior in differentiated sarcomas. But in undifferentiated sarcomas, there is no enough specific to identify its histological type or their true origin .

The histochemical stains provide a useful information in diagnosis of soft tissue sarcomas and are helpful in identifying broad diagnostic group of tumors, thus its role should not be neglected specially in cases which show limited morphological criteria for diagnosis .

Although the immunohistochemical stains have an important role in the diagnosis of soft tissue sarcomas and provide the diagnostic pathologist with powerful tool for studying tissue structure to reach their true origin, they fails to diagnose some undifferentiated soft tissue sarcomas which its diagnosis may obtained by using combination between a wide panels of immunohistochemical markers and special stains .

* AgNORs could be used as valuable adjunct to support the histological grade. Its count increases with the progression of grade. Its morphological pattern may also be considered as screening test for early detection of sarcomas compared with normal tissue .