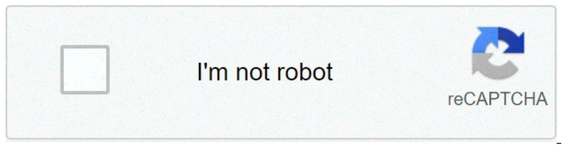

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Benign spindle cell neoplasm

Work out of the campus? Discover our remote access options Volume 123, edition 3 p. 171-179 Thin needle suction biopsy of mesenchymal injuries Spindeli, including Schwannomas, are demanding due to overlapping cytitomorphological features. The objective of the current study was to identify key diagnostic cytological criteria for the diagnosis of Schwannoma and to distinguish it from its common mimes. A total of 58 Schwannomas were evaluated and compared with 98 benign and low-grade mandrel cell lesions, including 17 gastrointestinal stromal tumors and 20 cases of fibromatosis. The confirmation of the biopsy was available for all cases. The authors visited the cellularity sample, the quality of the stroma (fibrous and fibrillar), the presence of individual cells with bipolar cytoplasmic processes and marked nuclear pleomorfism (in the absence of other malignity characteristics). Nuclear features valued including fishhook nuclei, intraanuclear inclusions, chromatin and nucleoli model. Schwannomas demonstrated fragments of cohesive fabric with fibrillate stroma and occasionally fibrous. The presence of intraanuclear inclusions and marked nuclear pleomorphism and the absence of single cells with bipolar cytoplasmic processes have emerged as statistically significant differences between the Schwannoma and the groups not the elderly. When 5 criteria were present (highly clustered numbers, few single cells, fibrillar stroma, nuclei with pointed and anisonucleosis suggestions) sensitivity, specification, the positive predictive value and the negative predictive value for the diagnosis of Schwannoma was 22% , 97%, 81% and 68%, respectively. Cohesive fabric fragments with fibrillar / fibrous stroma, intraanuclear inclusions, marked nuclear pleomorphism, and the absence of spindroom cells with bipolar cytoplasmic processes are strongly suggestive of Schwannoma and assistance to exclude potential mimic. Cancer (Cytoopatolo del Cancer) 2015. Â © 2015 American Cancer Society. Cancer (Cytopolo del Cancer) 2015; 123: 171 Ã ¢ â,¬ "179. Ã, Â © 2014 American Cancer Society. Although the fine needle suction biopsy (FNab) is not a widely accepted technique for the inquiry of the injuries of the musculoskeletal system, has several advantages up A traditional biopsy analysis, including a low rate of significant complications, a quick result and cost effectiveness.1-5 A commonly used approach to the cytological diagnosis of mesenchymal neoplasms is to group these aspirated in 6 categories: MyXOID, lightning, Pleomorphe cells, pleomorphe cells, polygonal cells, round cells and various -6, 7 of these, the barked subset is the most problematic due to the significant overlapping of the cytitomorphological characteristics of these entities .8-12 although the cytomorphological characteristics of Schwannomas13- 15 and other neoplasms of the benign and low-level spindle cell have been described above, to our knowledge the relative utility Diagnostics of these results has rarely rated until today. Although immunohistochemistry, ultrastructural analysis and molecular analysis can validate a diagnosis of Schwannoma, the material may not always be available for these accessories studies; When the cell block is available, the analysis is often performed on single dispersion cells with non-specific coloring background, thus making the interpretation difficult. The definitive categorization of low-grade spindle cell neoplasms on alone cytology is difficult because the benign and low-grade sarcons often demonstrate superimposed cytomorphological characteristics. Schwannomas have different distinctive morphological characteristics13-15; However, to the best of our knowledge, the specification of these criteria has not been tested Of a cohort of neoplasms that is more likely to be Schwannoma's mimic. We therefore evaluated the cytitomorphological characteristics of a large series of neoplasms of benign and low-level spindle cells to better define the differential diagnostic value and identify specific characteristics that could be used to permanently classify a benign that appears appears appears Lesion cell like Schwannoma. From 1990 to 2012, we identified 58 Schwannomi confirmed by biopsy with an adequate FNAB material from the James Homer Wright Archive ranks Wright Pathology Laboratories at the Massachusetts General Hospital in Boston. We also examined 98 FNA samples with histological follow-up that have been indexed as mandrel cell neoplasms (table 1). High quality (grade 2 and 3); Mobile phones predominantly pleomorphi, myxoid and round; And aspirated unsatisfactory were excluded from the study. Slides comprising tiled air stained material and alcohol-fixed, papanicooou-stained and hematoxylin and eosin stained material were examined. Table 1. Diagnosis in a low-grade cohort cellular spindle injury Diagnosis No. Schwannoma 58 Nonschwannoma low grade Mobile injury 98 Stromale Gastrointestinal Tumor 17 Fibromatosis 20 Solitary Fibrous tumor 8 Leiomyosarcoma 9 Leiomioma 2 Neurofibroma 7 Timoma 7 Nodular fasciitis 5 Sinovial sarcoma 4 Low 4 Fibromyxoid degree SARCOMA 3 Dermatofibrosarcoma Protuberans 2 Extrascheletric MyXOID Chondrosercoma 1 Scar 4 Organized Hematoma 1 Fibroma Sheath tendon 1 Pleomorpho Emisiderotic Tumor Angiectatic 1 MyoEpithelioma 1 Myofibroma 1 Angiomiolipoma / Pecoma 1 Dermatofibroma / Emangioma Sclerosant 1 Carcinoid / Well Differentiated Neuroendocrine Tumor 1 Melanoma 1 Abbreviation: Pecoma , PERIVASCULAR Epitelyoid cell tumor. To evaluate the validity of cytitomorphological recognition, an blind studio was executed. A range of cytitomorphological functions has been evaluated and classified. Cellularit Overall was classified 1+ to 3+. A fascicular model, defined as the presence of fabric fragments with a streaming layout of nuclei, has been classified as absent or 1+ 2+ per if present. Fabrics of fabric that occupy at least one field of low power (10 objective) were characterized as large fragments; All other fragments have been classified as small. Stroma, both fibrillate and fibrous, has been classified as half-quantity absent or as 1+ or 2+ depending on the quantity present. Single cells and tapered single cells with bipolar cytoplasmic processes were classified as absent, focally present (1+), or widespread (2+). Additional nuclear features that have been classified (1+ to 2+), if present, including nuclear sharp ends, particularly angled nuclei (Fishhook type nuclei) and intranuclear cytoplasmic inclusions. The presence or absence of nucleoli and verocay bodies has also been recorded. Marked nuclear pleiomorphism (Anisonucleosis) has been defined as> Variation of 2 times the size of the cores inside fabric fragments. This feature has been classified as possible as absent, focal length (1+), or widespread (2+). Statistical analysis was performed using Microsoft Office Excel (Microsoft Corporation, Redmond, Washington). All variables have been studied in an univariate format using the Chi-square test. A value p Ã ¢ Â¤ 05 was considered statistically significant. The average age of schwannoma diagnosis patients was 49.6 years (range 17-82 years). There were 23 males and 35 females. The majority of patients (33 patients) presented palpable superficial masses, including 21 from the head and neck region, 8 from the ends, 3 from the thoracic wall, and 1 involve the thyroid. The deep aspirates including mediastinic (7 cases); abdominal, retroperitoneal, foreport and pelvic (17 cases); and lung (1 case). Aspirated by Schwannomas were moderately to highly cellular, with only 15 cases (26%) demonstrate 1+ cellularity (Table 2). The cells were or exclusively cohesive or demonstrated a number of single cells in the background (81%) (fig. 1). Twenty-five cases had great fragments (fig. While the other 33 cases demonstrated small fabric fragments. A predominant fibrillar stroma in 51 cases (87.9%) (fig. 3) and is absent in 12.1% of cases. On air dried, this fibrillate material was metacromatic (Fig. 4). Fibrous stroma was identified in 33 cases, and was absent in 25 cases. CytoArchitectural layout of cell cells Fascialare in 27 cases, while other cases have demonstrated a model without reason with a random distribution of nuclei. Schwannoma is shown to the scan power that demonstrates numerous large and small cohesive bunches without single cells in the background (papanicouou stain, Ãƒ-20). Schwannoma is shown demonstrating a large cohesive cluster. The cells are arranged in irregular and irregular files and whorls, inside a dense fibrous stroma (papanicolaou stain, Ãƒ-40). Schwannoma is shown by demonstrating a cohesive cluster with fibrillar stroma and some Anisonucleosis (Papanicolaou stain, Ãƒ-100). Schwannoma is shown demonstrating cohesive clusters with metachromatic stroma (defeat the stain, Ãƒ-40). Some individual cells have been identified in a majority of cases (58.6%), and individual cells with bipolar cytoplasmic processes were present in 16 cases (27.6%). Furthermore, 3 cases contained rare single cells epitheliaide. The nuclei of Schwannomas consisted of a termination of oval nuclei pointed (Figure 5). The nuclear membranes were smooth and regular and the chromatin structure was fine. Mythotic figures were absent. Nucleoli were absent in 48 cases (82.8%), but when present were small and indistinct. Although verocay bodies have been identified in just 7 cases, other typical nuclear features of Schwannamoma were frequently. Intranuclear inclusions and the nuclei similar to fish were observed in 17 cases and 15 cases, respectively, and marked nuclear pleomorphism within the fragments of the fabrics was identified in 32 cases (Fig. 6). It is interesting to note that nuclear pleomorphism has been found in a widespread manner in 16 cases. Marked Nuclear Pleomorfism presented a strong contrast with other nuclear features, all suggestive of a benign neoplasm. In 6 cases, the nuclei were hydromatic but crammed, with detail loss of chromatin, suggesting ancient changes. HemosDerin background was identified in 8 cases and 9 cases contained scattered lymphocytes. Schwannoma is shown demonstrating low-quality spindled nuclei with pointed suggestions (Papanicooou stain, Ãƒ-400). Schwannoma is shown demonstrating some anisonucleosi and intraanuclear cytoplasmic inclusions (Macchia diff-quik, Ãƒ-400). The cytitomorphological characteristics of nonSchwannoma cases that served as a control group are listed in Table 2. This NonSchwannoma group included gastrointestinal stromal tumors (GISS) (17 cases), fibromatosis (20 cases), usual fibrous tumors (8 cases), fasciitis Nodular (5 cases) and low-grade fibromyxoid sarcoma (3 cases). This cohort included examples of other cytologically blandetically cydologically cydologic lesions, as listed in table 1. Schwannoma cases were significantly more likely to demonstrate a high number of cluster (p [â € œ € â € .006), cluster with stroma fibrillar (pÃ ¢ â,¬ â € ° = Ã ¢ â,¬ â € ™ â € ™ â € ™ .002). Table 2. Semi-quantitative score of cytitomorphological features in low-grade mandrel cell tumors Number of cases Schwannoma Nonschwannoma Total SUPERIAL DEEP Total Deep Total 58 33 25 98 42 56 CHI-SQUARE P Cytological features Grade %%%%%% Total cellularity Total superficial 1+ 26 21 32 31 26 34 .263 .82 .25 2+ 39 39 36 26 33 20 3+ 39 34 44 40 46 n Â ° of Cluster 0 0 0 0 7 12 4 .006 .003 .36 1+ 10 9 12 23 26 21 23 40 27 56 39 33 43 3+ 56 39 33 43 3+ 50 64 32 31 29 32 Small cluster size 57 45 72 60 70 54 .67 .035 .12 Wide 43 55 28 40 30 46 architecture Ã ¢ â,¬ œ'nonfasicular 0 9 3 16 11 10 11 11.74 .43 .53 1+ 24 24 24 28 18 36 2+ 67 73 60 61 72 54 Ã ¢ â,¬ œ'nonfasicular 0 53 64 40 66 87 52 .12 0.01 1+ 31 15 52 15 5 21 2+ 16 21 8 19 8 27 Ã ¢ ¬ Ã ¢ Æ ¬ Palisading 0 91 88 96 96 98 95 .51 .11 .79 1+ 7 9 4 3 3 4 2+ 2 3 0 1 0 2 Â, ¬ æ'''''''''''' ¥ 0 41 432 24 14 32.0009 .0002 .26 1+ 40 36 44 27 21 30 2+ 19 18 20 49 64 38 Ã, Â , ¬ to, that cell, Nuclei Nudi 0 53 52 56 46 43 48 .52 .66 .73 1+ 29 30 28 30 31 29 2+ 17 18 16 24 26 26 26 A fiber Bipolar cell / cells 0 88 52 53 72 40 63 .06 .0002 .62 1+ 14 6 24 26 31 21 14 2+ 6 24 21 29 16 Stroma Ã ¢ Fibrillar 0 12 15 8 43 50 38. 00006 .0003 1+ 26 15.02 40 27 26 27 62 70 2+ 52 31 24 36 Fibroso 0 43 45 40 55 59 52 .06 .007 .55 1+ 36 33 40 19 5 29 21 21 2+ 20 26 36 20 Ã ¢ Corpi Verocay 0 88 82 96 98 100 96 .009 .004 .92 1+ 12 18 4 1 0 2 2+ 0 0 0 1 0 2 Nuclear features A round oval nuclei 0 31 15 52 26 20 .47 22 .45 .01 1+ 17 18 16 17 12 21 52 67 2+ 32 60 62 59 A corrugated nuclei 0 86 85 88 92 95 89 .26 .12 .86 1+ 12 12 12 8 5 11 2+ 2 3 0 0 0 0 0 Ã ¢ pointed endanger 41 45 36 63 60 66 .002 .3 .002 1+ 33 33 32 30 31 29 26 21 32 2+ 7 10 5 Ã ¢ curved / fishhook - type nuclei 74 67 84 0 83 81 84 .42 .16 1 1+ 22 27 16 14 19 11 2+ 3 6 0 3 0 5 A intranucleari pseudoinclusions cytoplasmatic 0 71 67 76 93 93 93 .0002 .004 .03 1 + 24 24 24 7 7 7 2+ 5 9 0 0 0 0 Ã ¢ nucleoli 0 83 82 84 89 79 96 .56 .84 .048 1+ 14 12 16 9 17 4 2+ 3 6 0 2 5 0 Ã ¢ Anisonucleosis 0 45 30 64 67 64 70 .002 .007 .28 1+ 28 33 20 24 24 25 28 36 16 2+ 8 12 5 Ã ¢ widespread Atipia 0 91 91 92 86 86 86 .3 .49 .43 1+ 9 9 8 10 7 13 2+ 0 0 0 4 7 2 Ã ¢ hypercromasia 0 90 91 88 76 81 71 .03 .23 .1 1+ 10 9 12 16 14 18 2+ 0 0 0 5 8 11 These features were evaluated Cytomorphologic further based On the position: superficial (cute, subcuts, fascial, and intramuscular) respect (mediastine, intrathoracic, abdominal, retroperitoneal, and pelvic) (Table 2). There were 33 superficial schwans and 42 cellular injuries spindle nonchwannoma low degree identified superficial. Surface Schwannomi had a greater probability of having a large number of clusters (PA = at 0.003) large (PA = at 0.035). They had few to any single cells (PA = to 0.0002), with fewer statistically bipolar cells (PA = 0.0002), compared to other superficial low-grade spindle cell tumors. Also in this case, the stroma was most commonly fibril (Pa = Ã ¢ .0003) and the shown nuclei marked Anisonucleosis (PA = Ã ¢ .007). There were 25 deep Schwannomas compared to 56 profound low-grade fusiform cell lesions. Deep Schwannomi and deep grade low-grade spindle cell tumors demonstrated less statistically significant distinctive features than superficial tumors. The number of clusters, few to any single cells, presence of verocay bodies and Anisonucleosis were not statistically significant for deep tumors as they were for superficial lesions. However, Fibrillary Stroma (PA = Ã ¢ .02) and intranuclear cytoplasmic inclusions (PA = Ã ¢ .03) were most commonly observed in Schwannoma depth, as well as nuclei with pointed end. Combinations of features were then evaluated for test performance statistics to determine if they could carefully differentiate Schwannoma from other low-mandrel low cellular injuries (Table 3). Five criteria were chosen: 1) a high number of clusters; 2) few to any single cells; 3) Fibrillate stroma; 4) nuclei with pointed tips; and 5) Anisonucleosis. When all 5 criteria were present, sensitivity, specific, positive predictive value (PPV) and negative predictive value were 22%, 97%, 81% and 68%, respectively. The exclusion of clusters as a diagnostic criterion (using only 4 criteria) slightly improved the PPV (83%), while the specification has remained unchanged. By eliminating nuclear sharp tips and Anisonucleosis (using only 3 criteria) have improved sensitivity (64%) and the negative predictive value (77%) at the expense of the specification (74%) and PPV (59%). Separating the groups in superficial and deep lesions, the chosen histological criteria demonstrated a high specification and PPV for superficial Schwannoma compared to those with a deep position (Table 3). Table 3. Cytomorphologic statistical performance features for Schwannoma Compared to Others Low Grade Mobile Spindle Lensions High Number Few Single Fibrillar Nuclei With Total Pointed Tip,% Superficial,% Deep,% Cluster Tie Tips Anisonucleosis Spec Sens PPV NPV Spec Sens PPV Van Spec Sens PPV NPV XXXXX 97 22 81 68 100 100 100 65 95 12 50 71 xxxx 97 26 83 69 100 33 100 66 95 16 57 72 xxxx 95 28 76 69 98 36 92 66 93 16 50 71 xxxx 96 24 78 68 98 33 92 65 95 12 50 71 xxxx 91 34 69 70 93 45 83 68 89 20 45 71 xxxx 86 40 62 71 95 39 87 67 79 40 45 75 xxx 95 31 78 70 98 39 93 67 93 20 56 72 xxx 95 28 76 69 95 36 86 66 95 16 57 72 xxx 92 31 69 69 93 39 81 66 91 20 50 72 64 59 xxx 77 73 81 64 72 74 68 64 47 81 34 69 xx 70 91 90 42 78 67 91 24 55 73 Abbreviations: Van, Negative predictive value; PPV, positive predictive value; Sens, sensitivity; Spec, specific. When using 5 criteria or 4 criteria with the highest specificity, there were 3 false positive cases detected (1 case of GIST, 1 case of leiomyosarcoma, and 1 case of neurofibroma). There were 17 cases of GIST in the study cohort. GIST demonstrated high cellularity (65% of cases classified as 3+), typically with prominent large cluster dimensions. They have been arranged in a nonfascicular growth model (76%) with fibrillar stroma (71%). Some of the only leading cells were present in the background. They typically lacked point-toe nuclei (65%), but rarely demonstrated a FishhookÃ ¢ morphology. Rare palisons were also observed, verocay bodies and intranuclear cytoplasmic inclusions. The positive false gist occurred in the esophagus of an 83-year-old man. It has been carefully diagnosed as GIST C-kit-positive because it was accompanied by a nucleus of bioptic samples on which it was performed immunohistochemistry. Nine leiomyosarcomas were included in the study. All cases were cluster of fusiform cells that were generally large. Although some cases have demonstrated nonfascicular areas, the majority demonstrated prominent fascicular architecture (78%), with few or no single cells detected within the bottom. The majority of cases lacked cores with pointed tips. Intranuclear cytoplasmic inclusions have rarely been observed. The single positive fake leiomyosarcoma has occurred in the intrathoracic chest wall in an 85-year-old woman. There were 7 neurofibroids included in the study cohort. Most cases (71%) were low cellularity, typically with few small groups. A fascicular growth model was missing. They had rare individual cells in the background, usually naked nuclei. There was at least focal fibrillate stroma, but 71% of cases demonstrated fibrous zones. The nuclei were usually round to oval without wavy qualities. They only rarely had pointed tips but 3 out of 7 cases contained intranuclear cytoplasmic inclusions. There was some Anisonucleosis, overlap with the features seen in Schwannoma. The false positive neurofibroma occurred in the basin of a 27-year-old man with a history of type 1 neurofibromatosis (NF1) (germline mutation in the NF1). The preoperative diagnosis was Schwannoma. Although it is considered important for the diagnosis of recurring and metastatic sarcomas, FNAB is controversial if used as a diagnostic mode in the evaluation of primary Neoplasms.5 soft fabric, 24, 25 even if the perspective of a fake-positive diagnosis was raised, The 24 actual rate of false positive diagnosis from the published North American series is

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