CLINICAL CASE

Mesoblastic nephroma in the adult: a new case of an aggressive tumor


a Urology Service, Hospital de Especialidades UMAE 25, IMSS, Monterrey, Nuevo León, Mexico
b Pathology Service, Hospital de Especialidades UMAE 25, IMSS, Monterrey, Nuevo León, Mexico
c Pathology Service, Hospital de Especialidades UMAE 34, IMSS, Monterrey, Nuevo León, Mexico
d Medical Students, Universidad de Monterrey, Monterrey, Nuevo León, Mexico

Received 5 September 2015; accepted 10 February 2016
Available online 12 April 2016

Abstract

Background: Mesoblastic nephroma is a tumor that classically appears in childhood, and rarely in the adult. We present herein a case in an adult woman.

Methods: A 53-year-old woman presented with a palpable tumor, hematuria, and pain. A CAT scan revealed a heterogeneoune left renal tumor. Left radical nephrectomy was performed.

Results: A lobulated tumor was obtained that measured 17×16 cm and weighed 1,850 g. When sliced, a solid, nodular, whitish tumor with a fibrous aspect was revealed. Microscopic study showed long spindle cells and thin vessels and tubules in the stroma. The tumor cells were positive for vimentin and there was no atypia.

Conclusion: The patient is recurrence-free at 2 years of surveillance. The tumor was a benign mesoblastic nephroma, but it was very large and with serious clinical repercussions. The patient requires continued surveillance because of possible large tumor recurrence.

© 2016 Sociedad Mexicana de Urología. Published by Masson Doyma México S.A. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).
Mesoblastic nephroma in the adult: a new case of an aggressive tumor

**Introduction**

Mesoblastic nephroma in the adult is a rare pathology. It is more frequent in children and was first described in that age group. It is considered a benign tumor, but with a variable course and can be very aggressive. It is indistinguishable from renal carcinoma, both clinically and in imaging studies, and therefore requires surgical treatment and histopathologic confirmation for its diagnosis. There are about 120 reported cases of this type of tumor. Ours is the first case reported in Mexico.

**Clinical case description**

A 53-year-old woman with an unremarkable past history sought medical consultation for pain in the lumbar fossa and left hemiabdomen. She presented with hematuria of 6-month progression and weight loss. In the physical examination a hard mass was palpated in the left hemiabdomen. The patient was hospitalized and a contrast-enhanced computed tomography scan revealed a heterogeneous tumor on the left kidney. It measured 1,850 g and measuring 17 x 16 x 13 cm. The surface of the kidney was solid, nodular, blanquecinio al corte y de aspecto fibroso; al microscopio, con células ahusadas largas, vasos delgados y túbulos en el estroma, vimentina positivas en las células tumorales, sin atipia. Conclusión: La paciente, a 2 años de vigilancia, está libre de recurrencia. Se reportó un tumor nefroma mesoblástico benigno pero de gran tamaño y con gran repercusión clínica. Se requiere vigilancia ante la posible recurrencia en tumores grandes.

The macroscopic study revealed a specimen weighing 1,850 g and measuring 17 x 16 x 13 cm. The surface of the cut showed a multinodular, heterogeneous tumor with expansive edges and whitish fibrous zones at the central level. Septate cystic characteristics, with a nodular component and variable presence of calcifications in the capsule. The tumors are typically composed of multiple cysts and solid elements measuring between 2 and 24 cm.

**Discussion**

Mesoblastic nephroma, or better identified as mixed epithelial and stromal tumor of the kidney in accordance with the latest histologic classification of renal tumors, is a rare pathology in the adult. It was first described in 1973 in an adult by Block et al. and in children, in whom it is more common, by Bolande. The latter postulated that this tumor is derived from the renal blastema, which would explain the presence of epithelial elements of tubular conformation, a result of the pluripotent character of the mesenchymal cells in the development phase. Nevertheless, there is still no consensus as to the biologic origin of the tumor, given its very heterogeneous behavior.

According to Moslemi, 90% of mixed epithelial and stromal tumors are benign and 92% of the cases have presented in women. The most frequent signs and symptoms are: palpable mass in the flank (31.8%), hematuria (27.3%), and lumbar pain (22.7%).

Sahni et al. state that all mesoblastic nephromas in the adult are described as well-marginated tumors with multi-septate cystic characteristics, with a nodular component and variable presence of calcifications in the capsule. However, no tumor involvement in the renal vessels or lymphadenopathy have been found, suggesting the benign nature of the tumor. The present case reproduced the epidemiologic characteristics, clinical and imaging study manifestations, and surgical findings described in the majority of the reported cases.

The tumors are typically composed of multiple cysts and solid elements measuring between 2 and 24 cm. The largest reported tumor measured 25 cm, weighed 5,400 g, and had malignant development, progressing to death.

Two histologic variants have been described: classic and cellular. Each of the variants contains both an epithelial and a stromal component. The epithelial component is made up of large cysts, microcysts, and tubules that can be isolated or agglomerated, covered by an epithelium of varying differentiation grades. The stromal component consists of fibroblasts, microfibroblasts, and smooth-muscle cells. The classic variant has low stromal cellularity, whereas

**Métodos:** Mujer de 53 años con tumor palpable, hematuria y dolor con hallazgo mediante TAC de tumor renal izquierdo heterogéneo; se realizó nefrectomía radical izquierda.

**Resultados:** Se obtuvo un tumor lobulado de 17 x 16 cm, de 1,850 g de peso, sólido, nodular, blanquecinio al corte y de aspecto fibroso; al microscopio, con células ahusadas largas, vasos delgados y túbulos en el estroma, vimentina positivas en las células tumorales, sin atipia.

**Conclusión:** La paciente, a 2 años de vigilancia, está libre de recurrencia. Se reportó un tumor nefroma mesoblástico benigno pero de gran tamaño y con gran repercusión clínica. Se requiere vigilancia ante la posible recurrencia en tumores grandes.

© 2016 Sociedad Mexicana de Urología. Publicado por Masson Doyma México S.A. Este es un artículo Open Access bajo la licencia CC BY-NC-ND (http://creativecommons.org/licenses/by-nc-nd/4.0/).
the cellular variant has high cellularity, hemorrhage, necrosis, and a high mitotic rate.4,9

In relation to immunohistochemistry, the epithelial component has been described as reactive, especially for cytokeratin 7, EMA, and the AE1/AE3 cytokeratins, whereas the stromal component is reactive for vimentin, smooth-muscle actin, desmin, estrogen receptors, etc.10

The behavior of mixed epithelial and stromal tumors is benign,11 but malignant transformations that can even be sarcomatoid or carcinomatous, have been reported.12

The main differential diagnoses for mesoblastic nephroma in the adult include: nephroblastoma with cystic differentiation, multilocular cystic renal carcinoma, angiomyolipoma with epithelial cysts, renal synovial sarcoma, metanephric adenofibroma, renal cell carcinoma surrounded by angiomyolipoma, sarcomatoid carcinoma, and teratoma.4

Treatment options are radical nephrectomy or partial nephrectomy with tumor-free resection margins.4 Prognosis is generally good. Out of one hundred reported cases, only 2 have documented recurrence.8,9 Local recurrence has presented in cases with tumor extension to adjacent organs, making complete surgical resection impossible.9
Mesoblastic nephroma in the adult: a new case of an aggressive tumor

Figure 3  Tumor composed of cell bundles (A), alternating with thin-walled vessels (B), and trapped tubules and glomeruli (C). Positive for vimentin (D).

Conclusion

Mesoblastic nephroma in the adult is considered benign, even though in the majority of cases the clinical manifestations are not benevolent and they condition important comorbidities, such as anemia due to hematuria, weight loss from anorexia, and early satiety due to the extrinsic compression of the digestive tract. Moreover, the tumors are usually large, representing a surgical challenge with a high possibility of intraoperative complications. Therefore, it is essential to continue to study this pathology and publish its case reports in order to better understand its behavior.

Ethical responsibilities

Protection of persons and animals. The authors declare that the procedures followed conformed to the ethical standards of the responsible committee on human experimentation and were in accordance with the World Medical Association and the Declaration of Helsinki.

Data confidentiality. The authors declare that no patient data appear in this article. The authors declare that they have followed the protocols of their work center in relation to the publication of patient data.

Right to privacy and informed consent. The authors have obtained the informed consent of the patients and/or subjects referred to in the article. This document is in the possession of the corresponding author.

Financial disclosure

No financial support was received in relation to this article.

Conflict of interest

The authors declare that there is no conflict of interest.

References