

# Sarcomatoid morphology (Required)

## Reason/Evidentiary Support

The presence of sarcomatoid morphology is seen in approximately 5% of renal cell carcinomas and is associated with a poor prognosis.<sup>15,23-26</sup> Numerous studies have confirmed that sarcomatoid morphology may occur within any of the main subtypes of renal cell carcinoma and represents high grade disease.<sup>1,9</sup> The five year survival for patients with sarcomatoid morphology is of the order of 15 to 22%.<sup>1,9,23-26</sup> The outcome associated with sarcomatoid morphology is stage dependent.<sup>27</sup> The presence of sarcomatoid morphology is incorporated into the WHO/ISUP grading system (Grade 4).<sup>15</sup>

## References

1. World Health Organization (WHO) Classification of tumours . Pathology and genetics of the urinary system and male genital organs. Humphrey PA, Moch H, Reuter VE, Ulbright TM, editors. Lyon, France:IARC Press;2016
9. Srigley JR, Delahunt B, Eble JN, et al. The International Society of Urological Pathology (ISUP) Vancouver classification of renal neoplasia. Am J Surg Pathol 2013; 37: 1469-1489.
15. Delahunt B, Cheville JC, Martignoni G, et al. The International Society of Urological Pathology (ISUP) Grading System for Renal Cell Carcinoma and Other Prognostic Parameters. 2013; 37:1490-1504.
23. Cheville JC, Lohse CM, Zincke H et al. Sarcomatoid renal cell carcinoma. An examination of underlying histologic subtype and an analysis of associations with patient outcome. Am J Surg Pathol 2004;28:435-441.
24. Cangiano T, Liao J, Naitoh J et al. Sarcomatoid renal cell carcinoma: biologic behavior, prognosis and response to combined surgical resection and immunotherapy. J Clin Oncol 1999;17:523-528.
25. Delahunt B. Sarcomatoid renal cell carcinoma. the final common dedifferentiation pathway of renal epithelial malignancies. Pathology 1999; 31: 185-190.
26. de Peralta-Venturina M, Moch H, Amin M et al. Sarcomatoid differentiation in renal cell carcinoma. A study of 101 cases. Am J Surg Pathol 2001; 25: 275-278.
27. Mian BM, Bhadkamkar N, Slaton JW et al. Prognostic factors and survival of patients with sarcomatoid renal cell carcinoma. J Urol 2002; 167: 64-70.