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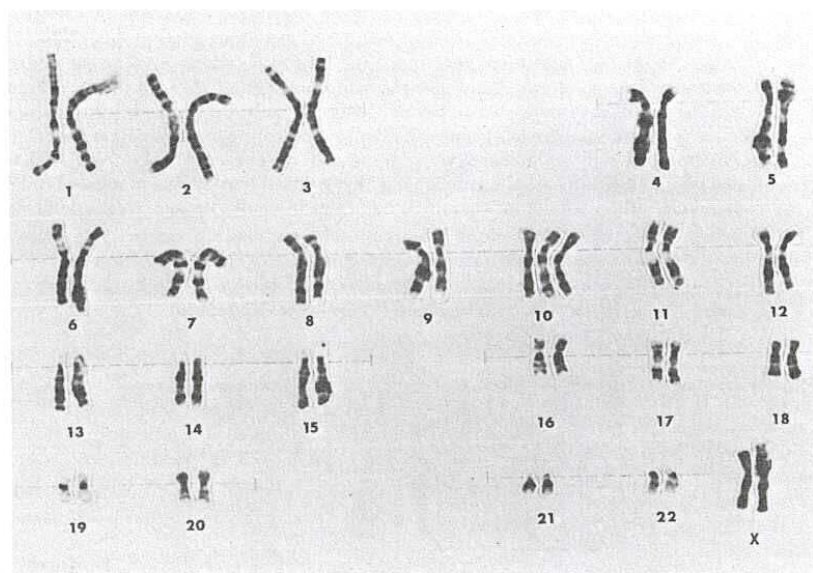
Trisomy 10 in Renal Cell Carcinoma

A. Meloni, J. E. Pontes, and A. A. Sandberg

ABSTRACT: We report four renal cell carcinomas, grade II, with trisomy 10 (+10) as the only karyotypic change. We propose that this cytogenetic anomaly may be associated with low-grade renal carcinoma, although more cases will have to be studied to support the hypothesis.

Trisomy 10 has been observed in endometrial tumors [1] but has not yet been described in renal cell carcinoma [2-4]. Trisomy as the sole abnormality in solid tumors generally is rather rare because by the time cytogenetic analysis is performed the tumor is

Figure 1 G-banded karyotype of a patient with trisomy 10.



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Table 1 Cytogenetic findings in four patients with clear cell renal cell carcinoma, grade II

Patient	Age/sex	Tumor stage	Karyotype (No. of cells, %)
1	40/M	1	46,XY (33.3)/47,XY,+10 (66.7)
2	66/F	2	46,XX (86.7)/47,XX,+10 (13.3)
3	81/F	1	46,XX (66.7)/47,XX,+10 (33.3)
4	73/F	2	46,XX (80.0)/47,XX,+10 (20.0)

already at an advanced stage and shows numerous chromosomal abnormalities, tending to mask the primary change. The four cases we studied were diagnosed as clear cell renal cell carcinomas, grade II. The karyotype of patient 3 is shown in Figure 1. Renal cell carcinoma is the most common renal tumor in adults, representing 85% of all primary renal malignancies. There are three cell types: clear cell, granulated cell, and spindle cell types. Clear cell tumors are distinctly different from those containing granular cells; the former are very rich in glycogen and lipid. Clear cells are present in about 25–51% of all renal cell carcinomas. Dickersin and Colvin [5] reported that cell type has some influence on the prognosis. From their study, they concluded that patients with pure clear cell tumors had a 5-year survival rate of 58% whereas the presence of granular cells lowered the rate to 46%. Spindle cell tumors, the most anaplastic form, have the worst prognosis (23% survival at 5 years) [5].

Based on their nuclear appearance, renal cell carcinomas are divided into four grades. Grade I has lower malignant potential than grade IV [5]. All four patients we studied had renal cell carcinoma grade II. Additional patient data are shown in Table 1. Trisomy 10 may be associated with low-grade malignant tumors. Chromosome analysis in solid tumors has been very useful in indicating the association of specific abnormalities with particular types of tumors [6–8]. The results of our study show that trisomy 10 (+10) may be associated with low-grade renal cell carcinomas. Studies based on additional similar cases will be useful in confirming or rejecting this hypothesis.

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CASE REPORT

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