

## Expression of the Anti-apoptotic Marker, Survivin, Correlates with Increased Incidence of Relapse After Curative Resection of Cancer of the Oral Cavity

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**Background:** The optimal management of oral cavity cancer typically involves primary surgical resection, however disease recurrence remains a major problem in management of this disease. Pathologic markers, which include positive margins, extracapsular nodal extension, lymphovascular invasion, and perineural invasion predict likelihood of recurrence. However, there currently are no biomarkers that can be used to follow patients following curative resection. High expression of cytoplasmic/nuclear survivin is an early event during oral carcinogenesis. Survivin is a member of the apoptosis inhibitor protein gene family. This anti-apoptotic protein is up-regulated in many types of cancer and is associated with poor prognosis and recurrence. We explored whether this biomarker predicted disease recurrence after curative resection of oral cancers. **Materials and method:** This is a retrospective study of 46 patients with oral cancers who underwent curative surgery. Cases were matched and assigned into two groups for analysis, with or without loco-regional recurrence/distant metastases. Biopsy sections were studied for expression of survivin and the metastatic tumor marker CD44v6 by IHC technique. **Result:** By using a scoring system, the surgical margin of the recurrent group showed a higher survivin score than non-recurrent group ( $p=0.003$ ). Interestingly, the primary tumor of the recurrent group showed a markedly higher survivin score than the recurrent group ( $p=0.000$ ). By contrast, the CD 44v6 scores of the primary and the margins showed no significant difference between either group. **Conclusion:** Tumor expression of the anti-apoptotic marker, survivin, correlates with the potential for tumor recurrence after curative oral cancer surgery. This study suggests that monitoring the survivin expression at the surgical margin may serve as a biomarker to evaluate the adequacy of the surgical margin and may also serve to provide information to prepare a better preoperative plan for oral cancer surgery in order to improve the curative outcome.