



ENDOSCOPIC LASER SURGERY AS ADJUVANT THERAPY FOR RESIDUAL NASAL NEOPLASIA FOLLOWING CURATIVE-INTENT EXTERNAL BEAM MEGAVOLTAGE RADIATION THERAPY IN DOGS

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Treating local recurrence or residual intranasal neoplasia after definitive radiation therapy (RT) is a longstanding challenge in veterinary medicine because local progressive disease is the main cause of death.^(1,2) Though post-RT surgical debridement through rhinotomy has shown to increase overall survival times, complications of such invasive surgery are an important argument against intervention after incomplete response to RT.⁽³⁾ Comparable tumor reduction may be achieved through a minimally invasive rhinoscopic surgical approach.

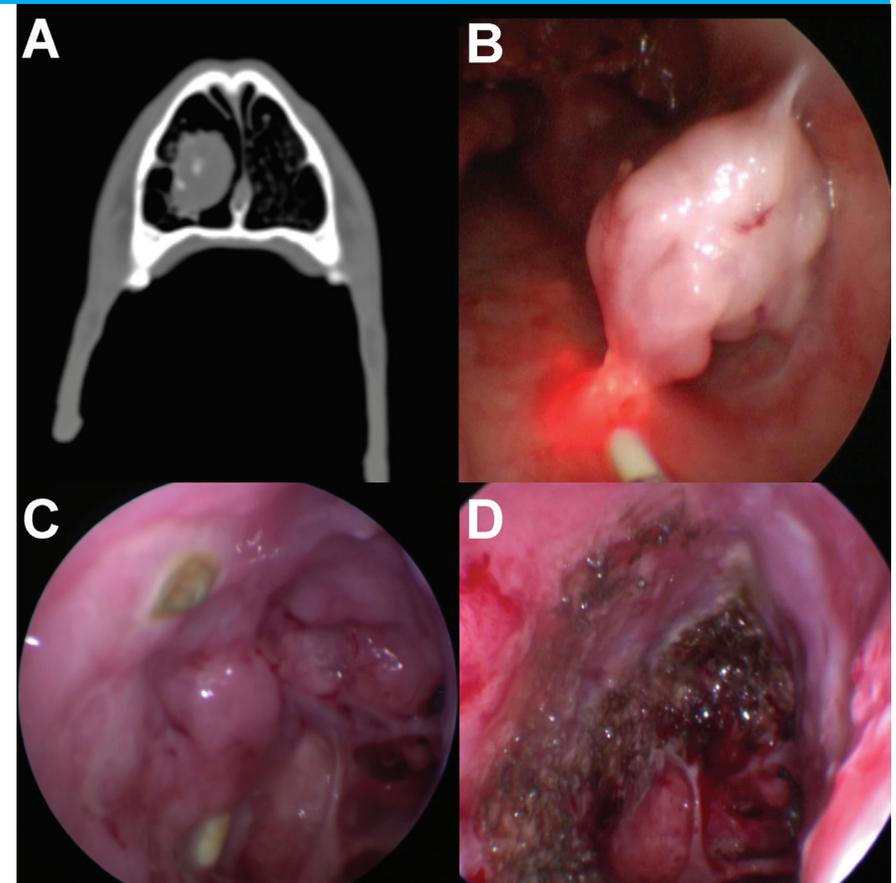
We prospectively evaluated feasibility, effectiveness, complications, and long-term follow-up of rhinoscopic laser ablation of local residual intranasal neoplasia after previous curative intent RT in dogs.

We hypothesized that rhinoscopic laser ablation reduces macroscopic tumor disease, can be performed repeatedly without major surgery-related morbidity, is feasible as an outpatient treatment, prolongs survival, and increases quality of life.

Thirteen dogs with residual intranasal tumor after RT received a median of 3 treatment sessions (range 1-6) using either a 1064 nm Nd:YAG or 1470 nm diode laser. Male:female ratio 1.2:1, median age 9 years (range 6-14). Median survival time was 481 days (range 174-1250), with 5 dogs currently alive. Treatment was well tolerated and associated clinical signs were considered mild and included mucoid discharge (n=11), mild epistaxis (n=10), and sneezing (n=8).

The minimally invasive approach enabled repeated treatments without increased risk for side effects. Complications were mild compared to morbidity from rhinotomy, treatment costs lower, and hospitalization times absent. Median survival time in our trial (16 months) is comparable to published results of megavoltage radiation therapy for nasal neoplasia in dogs (13-19 months).^(1,2) In addition, most cases showed reasonable to good clinical improvement after laser surgery, especially when residual tumor mass blocked airflow.

Rhinoscopic laser ablation of residual intranasal neoplasia following curative intent RT is a feasible adjunctive therapy providing improved quality of life in a minimal invasive and repeatable procedure.



Sinonasal neoplasia in a dog: (A) - computed tomography image of residual disease of an intranasal sarcoma taken 3 months post full course radiation (B) - rhinoscopic image of residual disease of the tumor in image A. The Nd:YAG laser tip is just visible at the ventral aspect of the residual tumor tissue. (C) - Rhinoscopic image of residual post curative intent radiation therapy in a case with anaplastic carcinoma. Extensive residual disease is evident. D - rhinoscopic view directly after rhinoscopic laser ablation of the same area depicted in image C.

References

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