The transoral route is the gold standard for odontoid resection. Results are satisfying though surgery can be challenging for patients and surgeons due to its invasiveness. A less invasive transnasal approach could provide a sufficient extent of resection with less collateral damage. The technique of transnasal endoscopic odontoid resection is demonstrated by a case series of three patients. A fully endoscopic transnasal odontoid resection was conducted by use of CT-based neuronavigation. A complete odontoid resection succeeded in all patients. Symptoms such as dysarthria, swallowing disturbance, salivary retention, myelopathic gait disturbances, neck pain, and tetraparesis improved in all patients markedly. Transnasal endoscopic odontoid resection is a feasible alternative to the transoral technique. It leaves the oropharynx intact, which could result in lower approach related complications especially in patients with bulbar symptoms.