

# Vocal Cord Outcomes After Loss of IONM Signal

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## **Background:**

Intraoperative nerve monitoring (IONM) is widely used to confirm identification of the recurrent laryngeal nerve. Despite common use, there is little data to guide practice if signal is lost intraoperatively. The objective of this study is to determine outcomes associated with loss of IONM signal.

## **Methods:**

A retrospective review was performed to identify all thyroidectomies or parathyroidectomies with loss of IONM signal from 2002-2022. Vocal cord outcomes include voice quality on POD0 and POD1, and cord movement on direct laryngoscopy.

## **Results:**

1129 patients underwent surgery with IONM use, with loss of signal in 163 cases (14%). Patients with persistent loss of signal (>20 minutes) had significantly worse vocal cord outcomes than patients with transient signal loss; both groups had worse outcomes than patients with no signal loss. Persistent signal loss occurred on the first side of a planned total thyroidectomy (TT) in 33 cases. In 18 cases TT was continued and in 15 cases contralateral surgery was aborted, with no difference in vocal cord outcomes between the groups.

## **Conclusion:**

Loss of IONM signal for any length of time is correlated with poorer vocal cord outcomes than uncomplicated surgery. However, in planned bilateral cases where signal is lost on the first side, continuing surgery does not necessarily worsen postoperative outcomes.