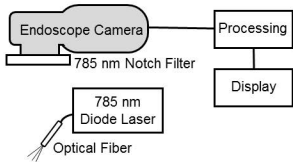


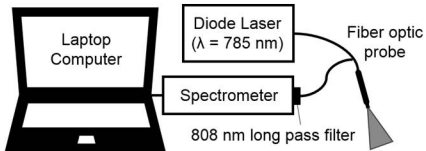
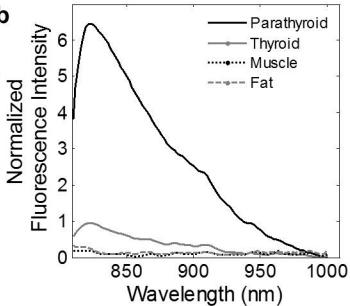
Supplemental Figure Legend

Supplemental Figure 1. Near-infrared fluorescence spectroscopy detects parathyroid tissue intraoperatively on 110 patients undergoing parathyroidectomy or thyroidectomy. A) Portable fluorescence spectroscopy system comprised of a spectrometer, NIR laser diode, laptop computer, hand-held fiber optic probe. B) Representative fluorescence spectra from patient undergoing thyroidectomy shows highest level of fluorescence in parathyroid.

Supplemental Figure 2. Intraoperative near-infrared fluorescence imaging system. A) Surgical cart with fluorescence processing and display (right) and detector with NIR diode laser (left). B) Close up of fluorescence imaging detector with band-pass filter. C) Schematic of fluorescence imaging system for parathyroid detection.

Supplemental Table 1. The performance of near-infrared fluorescence spectroscopy in detecting the parathyroid gland compared to visual assessment and histology for excised glands.

a**b****c**

a**b**

Visual Diagnosis	Surgeon confidence in visual diagnosis (high/medium or low)	High NIR fluorescence signal (Y/N)	Histology	Number of Measurements
Parathyroid	high/medium	Y	Parathyroid	55
Parathyroid	high/medium	N	Thyroid	2
Parathyroid	low	Y	Parathyroid	2
Parathyroid	low	N	Thyroid/muscle/fat	6
