Intraoperative Fiducial Tracking in TORS

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Goals:
• Develop and implement a method to intraoperative track fiducial under stereoscopic camera

Significance:
• TORS is becoming more and more popular
• Intraoperative fiducial tracking is an important step in a TORS system with stereoscopic video augmentation

Results:
• Fiducial Detection of recorded endoscopic images
• Fiducial Detection of recorded endoscopic videos
• Fiducial Tracking of recorded endoscopic videos
Intraoperative Fiducial Tracking in TORS

TORS:
• TransOral Robotic Surgery
• Image guidance with stereoscopic video augmentation during TORS is based on coordinate transformation.
• It is done by placing a fiducial on the base of tongue

Workflow:
• Use color and edge characteristics to detect the frame which encompasses the three fiducials
• Use color and position characteristics to detect the fiducials
• Apply Kalman filter to track the fiducials in videos