Project created on 06.09.2016 02:03.

Report for project Senior Design

Task created on 29.09.2016 18:40.

No due date

Background Research on SGS

No description

Task tags: *No tags*

Post Treatment Subglottic Stenosis *[postreatmentSGS.jpg]*
Uploaded by Kyle Sachdev on 29.09.2016 18:45.

Comments for result Post Treatment Subglottic Stenosis

Kyle Sachdev on 29.09.2016 at 18:46: Subglottic Stenosis that has been treated with laser division and balloon dilation

Subglottic Stenosis *[sgs.jpg]* Uploaded by Kyle Sachdev on 29.09.2016 18:42.

Comments for result Subglottic Stenosis

Kyle Sachdev on 29.09.2016 at 18:44: Subglottic Stenosis before treatment

Created by Kyle Sachdev on 29.09.2016 19:36.

- Narrowing of the subglottic area that affects soft tissue and cartilage
- Narrowing is normally caused by a buildup of scar tissue
- Usually affects the cricoid cartilage
- Subglottic Stenosis (SGS) can be congenital or acquired
    - Acquired is by far more common than congenital
- Trauma is the most common cause of SGS
    - about 90% of of all cases of acquired SGS is caused from endotracheal intubation
- intubation pressure on the complete cartilaginous ring is what affects the subglottic area
- Duration of intubation is most important factor is development of stenosis
    - 7-10 days is acceptable, but after that the risk of trauma increases dramatically
- size of tube should correlate to patients height
    - normally no bigger than 7-8 mm for men and 6-7 mm for women

- Acquired stenosis is secondary to trauma of the subglottic region
- Symptoms include:
    - Dyspnea
    - Stridor
    - Hoarsness
    - high index of suspicion is warranted with the onset of respiratory problems following any duration of intubation
- graded on severity of block
    - grade 1 < 50% obstruction
    - grade 2 51% to 70% obstructions
    - grade 3 71% to 99% obstruction
    - grade 4 no detectable lumen (complete stenosis)
- Treatment depends on grade of stenosis
- for mild cases (grade 1 and grade 2) treatment is either observation or endoscopic surgery
    - for the mildest cases where the patient is asymptomatic close observation is used to make sure the patient doesnt get worse
    - Endoscopic surgery:
    - A knife or laser is used to cut the scar tissue
    - An angioplasty balloon is dilated in order to push the scar tissue radially and open up the airway
    - Our device will most likely work similarly to the angioplasty balloon in that it will put pressure on the scar tissue to push it radially
    - Balloon dilation may also be used for more serious cases
- Treatment of grade 3 and 4 stenosis
    - almost always need a tracheostomy tube to breathe
    - Laryngotracheal resconstruction surgery :
    - use pieces of rib cartilage to expand the airway
    - A vertical cut is made through the narrowed portion of the airway
    - Cartilage grafts are shaped into ellipses using a scalpel
    - the posterior graft has a ledge so it can lock on
    - the grafts can be put in the anterior, posterior, or both at the same time
    - Cricotracheal Resection
    - for the most severe cases
    - scar tissue and most of the anterior cricoid cartilage is cut out
    - normal trachea is brought up to replace it
- Information from
    - http://www.chop.edu/conditions-diseases/subglottic-stenosis/about#.V-2IU44-RX_
    - https://www.utmb.edu/otoref/grnds/pedi-subglot-070627/Pedi-subglot-070627.pdf
    - http://emedicine.medscape.com/article/865437-overview?pa=zzrmajqUH4booormsuylt3674WAqjrCVZgB%2FhgNHFaEwYZ1nPQkjr8l0B%

Comments for result

No comments

Activity of task Background Research on SGS

29.09.2016 18:40 *Kyle Sachdev* created task **Background Research on SGS** .
29.09.2016 18:42 *Kyle Sachdev* added file result **Subglottic Stenosis** .
29.09.2016 18:44 *Kyle Sachdev* edited file result **Subglottic Stenosis** .
29.09.2016 18:44 *Kyle Sachdev* commented on result **Subglottic Stenosis** .
29.09.2016 18:45 *Kyle Sachdev* added file result **Post Treatment Subglottic Stenosis**.
29.09.2016 18:46 *Kyle Sachdev* commented on result **Post Treatment Subglottic Stenosis**.
29.09.2016 19:36 *Kyle Sachdev* added text result .
29.09.2016 21:25 *Kyle Sachdev* edited text result .
29.09.2016 21:28 *Kyle Sachdev* edited text result .
29.09.2016 21:45 *Kyle Sachdev* edited text result .
30.09.2016 15:15 *Kyle Sachdev* edited text result .
30.09.2016 16:01 *Kyle Sachdev* edited text result .

Samples of task Background Research on SGS

No samples