Background & Purpose
The majority of nasopharyngeal carcinomas are treated by radiation therapy. Some of the common sinonasal complications in these patients are sinusitis, crusting, adhesions, xerostomia, and hearing loss.

Our study examined the nature and frequency of post-treatment co-morbidities associated with chemoradiation in the setting of nasopharyngeal squamous cell carcinoma, as well as the timing of onset of these symptoms after completion of treatment.

Methods
A single center, retrospective chart review of patients who underwent radiation therapy treatment for nasopharyngeal carcinoma between 2004-2019 was performed. Patients were evaluated for local complications. Univariate analysis was performed using SPSS software.

Inclusion criteria:

Exclusion criteria:
- Patients that experienced recurrence of their tumor within the analyzed time frame
- Patients diagnosed with non-squamous cell carcinoma of the nasopharynx
- Patients not deemed candidates for curative treatment due to the extent of intracranial or distant metastatic disease

Results
97 patients met inclusion criteria, and the majority had at least one complication:

- No Complications (32%)
- ≥ 1 Complication (68%)

11% patients experienced chronic sinusitis requiring treatment:
- 6 received antibiotics
- 5 required FESS

80% were successfully treated with FESS. Sinusitis occurred on average 7.2 months following radiation therapy.

23% patients experienced serous otitis media:
Of these, 70% patients (16) received a tympanostomy tube.

Five patients with a tympanostomy tube developed otorrhea, all of which received successful medical treatment (Ciprodex or steroid drops).

22 patients experienced nasal crusting:
These patients required debridement, all done in-office.

Occurred on average 6.7 months following radiation therapy.

4 patients experienced adhesions requiring treatment.
Occurred on average 5.3 months following radiation therapy.

30 patients experienced new hearing loss:
The majority of patients refused hearing aids to compensate for their newly acquired hearing loss; five patients opted for hearing aids.

Conclusions
• Sinonasal morbidity was seen in nearly two thirds of patients diagnosed with NPC following chemoradiotherapy.
• The majority of complications were seen on average 6 months following treatment completion.
• Xerostomia was most common, but patients also commonly experienced chronic sinusitis, nasal crusting, serous otitis media, and hearing loss.
• The majority of patients who had chronic sinusitis that required FESS had resolution of symptoms following surgery.
• The majority of patients who developed serous otitis media received a tympanostomy tube.
• The majority of patients who developed otorrhea after tube placement were successfully treated with medical treatment.
• Nasal crusting was common but did not require surgery for successful debridement.
• Despite radiation’s efficacy in treatment, patients may be at significant risk of at least one complication following treatment.

Acknowledgements:
Gratitude to the Department of Otolaryngology – Head and Neck Surgery at Thomas Jefferson University for their support. Thank you to Zahed Shaikh for his help with data collection.