**Sinus Fungus Ball in the Korean Population**

**Imaging Characteristics of 55 Cases**

**Inseon Ryoo**, Soo Chin Kim, Sangil Suh, Hyena Jung, Hye Young Sun, Hua Sun Kim
Korea University Guro Hospital
Seoul national university hospital Healthcare system Gangnam center

**Background**

Fungus ball
- the most frequent form of fungal sinusitis
- preoperative suspicion of fungus ball is important in selecting the appropriate treatment strategy

MR findings of fungus ball
- Seo et al. (Acta radiologica 2011; 52: 790-795) : a marked hypo-intensity of fungus ball with hyper-intense mucosal walls on T2WI
  - Marked hypo-signal intensity can be mistaken as normal sinus air in clinical practice

**Purpose**

To identify reliable MRI findings of fungus ball, especially focusing on imaging findings of T1-weighted images, by comparing with T2-weighted images and the CT findings in patients with pathologically confirmed fungus ball.

**Materials and Methods**

55 patients (M:F=18:37, mean age= 64.4 ± 10.8 years)
- underwent sinonasal surgery for treatment of chronic sinusitis
- histopathologically confirmed as having sinonasal fungus balls, using H&E stain, GMS stain and PAS
- obtained preoperative both CT and MR imaging studies

**Image analysis of CT images**
- Location, Multi-focality, Presence of calcifications in the soft tissue mass, Classification of calcifications

**Image analysis of T2-weighted images**
- Signal intensity of fungus ball, Presence of the dark SI portion in the fungal mass, The extent of dark SI portion

**Image analysis of T1-weighted images**
- Signal intensity of fungus ball, Presence of the high SI portion in the fungal mass, The extent of dark SI portion

**Results**

- Forty-nine (89.1%) of the 55 patients calcifications on CT
- There was no statistically significant correlation between the presence or shape of calcifications on CT scans and the presence of high signal intensity portion on T1-weighted images (p > 0.05).

**Conclusion**

The possibility of fungus ball can be suggested by

1) the presence of hyper-signal intensity portions in the fungal mass on T1-weighted images in conjunction with
2) a dark signal intensity surrounded by high-signal, hypertrophic mucosal walls in the paranasal sinuses on T2-weighted images.