Introduction

- Foreign body ingestion is a common complaint in the pediatric emergency department (ED) in the toddler age group.
- Older children and teenagers less likely to ingest foreign bodies, in the absence of a psychiatric disorder or intellectual impairment.
- Wire grill brush bristles can be hidden in grilled food, and unknowingly ingested by consumers of all ages.\(^1\)\(^-\)\(^3\)
- We report six pediatric cases of wire grill brush bristle ingestion seen at a single institution within a 3 year timespan.

Methods and Materials

- Billing data from one tertiary children’s hospital were reviewed for:
  - all patient visits for a surgical procedure or radiographic exam involving a foreign body, from 10/1/2008-4/30/2013.
- Eligible cases had a statement in the medical record that the wire was likely from a grill cleaning brush, and had to have reported eating food from a grill prior to the event.
- All cases had to have the appearance of the wire on imaging and/or at the time of removal had to be consistent with a grill cleaning brush bristle.
- This study was approved by our local institutional review board.

Results

- Six patients aged 8-16 years suffered grill brush bristle injuries, all within the last 3 years of study.
- Five were included in all three data sources, one had a clinic visit only.
- All subjects were developmentally typical and healthy prior to the ingestion event.
- All cases occurred between April and June.
- Five patients presented with oropharyngeal or neck pain shortly after eating grilled meat.
  - Neck radiographs demonstrated the bristle in the hypopharynx (three patients) or cervical esophagus (two patients).
  - Four of the wire bristles were removed endoscopically
  - One most likely dislodged and was swallowed during an attempted endoscopic procedure.
  - One patient had delayed onset of abdominal pain and vomiting, with an extraluminal wire bristle causing an interloop bowel adhesion and obstruction.

Discussion

- Our six cases of wire grill brush bristle foreign bodies include the youngest pediatric cases reported.
- One severe consequence reported in our study.
- 20 cases previously reported in the literature:
  - fourteen involved the neck or esophagus; six were gastrointestinal or infra-abdominal.
  - six previously published pediatric cases involving patients between the ages of 11 and 19\(^5\)\(^-\)\(^6\)
  - fourteen cases involving adults\(^1\)\(^-\)\(^3\)\(^,\)\(^7\)
- Majority of identified cases involve upper aerodigestive tract
  - propensity for lodging in upper aerodigestive tract vs. difficulty identifying small foreign bodies on plain abdominal radiographs.

Conclusions

- Pediatric wire grill brush bristle ingestions are uncommon, but likely underreported.
- Wire bristles can result in serious injuries.
- Patients with odynophagia or abdominal complaints should be questioned about possible foreign body ingestion and recent grilling.
- Improved grill brush design or alternatives such as pumice stones may decrease these injuries.

References