The Grill Can Kill: Perforation of the Small Bowel by Metallic Grill Brush Bristles

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82% of North Americans own a grill and utilize it on average 45 times per year. In June 2012, the CDC dedicated an M&M Weekly Report to the ingestion of grill brush bristles, mentioning 2 cases of intra-abdominal intestinal perforation. We identified 6 patients with an intra-abdominal, intestinal perforation secondary to the ingestion of a grill brush bristle. No previous report has assessed grilling habits of patients or circumstances prior to presentation. We sought to describe the clinical presentation of patients with grill brush bristle perforation. We also assessed grilling habits of patients in an attempt to identify risk factors that lead to the ingestion of wire bristles from grill brushes.

We identified 6 patients, over 2 years, who presented with intra-abdominal intestinal perforation following accidental ingestion of a brush bristle. Chart review was performed to identify patient's clinical course and treatment. Subjects were contacted and administered a survey to identify potential common factors. The survey consisted of questions that examined symptoms at presentation, grilling habits, grill cleaning techniques, grill brush preference and post-ingestion lifestyle modifications. We contacted all patients in follow-up and arranged for in-home visits to inspect the grill and grill brush.

50% were male, 83.4% were Caucasian, with an age range of 18 to 65 (mean 42.5). 4 patients presented to the ED; 2 presented to their PCP; all complained of abdominal pain. All of the ingested bristles were identified by CT scan, 5/6 had perforated the small intestine. The 6th patient’s bristle was in the pelvis outside the lumen of the GI tract and was presumed to have been extruded through the rectum. 3 patients required laparoscopy for enterorrhaphy. 2 underwent laparotomy – 1 for enterorrhaphy and 1 for abscess drainage. The remaining patient has been followed clinically without intervention. 4 subjects completed the survey. All respondents stated that they grill at least 3 times per week and the accidental ingestion occurred after eating food cooked on a home grill. All indicated that their grill brushes had not been replaced for at least 2 years prior to the ingestion of the bristle. Time from presumed ingestion to presentation ranged from 3-14 days, 1 patient was unsure of the presumed time of ingestion. 3 required inpatient admission with length of stay of 1,2, and 7 days. 2 underwent outpatient surgery. 3 patients indicated chicken breast was the presumed food grilled prior to presentation. All respondents have since modified their grilling techniques and the methods used to clean or inspect their grill.

Intra-abdominal intestinal perforation secondary to ingestion of grill brush bristles appears to be increasing. It is critical to raise surgeon awareness of this injury in order to diagnose and provide surgical intervention. Alternative methods should be used to clean the grill or at a minimum brushes over 2 years old should be replaced.