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## International Journal of Surgery Case Reports

journal homepage: [www.casereports.com](http://www.casereports.com)

## False teeth in an apple core: Unusual presentation of a colorectal carcinoma

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## ARTICLE INFO

## Article history:

Received 25 October 2014

Received in revised form 3 November 2014

Accepted 28 December 2014

Available online 8 January 2015

## Keywords:

Colorectal cancer

Denture

Ingestion

Ileus

## ABSTRACT

**INTRODUCTION:** Ingestion of foreign bodies is common amongst the elderly. Although most foreign bodies pass through the gastrointestinal tract without consequence some cause complications including bowel perforation.

**PRESENTATION OF CASE:** We present a case of denture ingestion that led to the diagnosis of an unsuspected colorectal cancer. The patient underwent radical surgery to remove the tumor and the ingested denture. The operation and recovery were uneventful.

**DISCUSSION:** Complications from ingested foreign bodies mostly occur at points of anatomical intestinal tapering. However, tumors of the gastro-intestinal tract can also lead to obstructions and other complications. As the incidence of tumors increases with age, this possibility should be considered in the differential diagnosis of unusual situations.

**CONCLUSION:** Although impaction of a foreign body in a gastro-intestinal tumor is very rare, our case suggests close follow-up is prudent in the elderly should a foreign body be ingested.

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## 1. Introduction

Ingestion of foreign bodies is common amongst the general population, and is usually involuntary [1]. Although most foreign bodies pass through the gastrointestinal tract without consequence around 1% of reported cases cause complications, including bowel perforation [2]. We present a case of denture ingestion that fortunately led to the diagnosis of an unsuspected colorectal cancer. The patient underwent radical surgery to remove the tumor with the impacted denture.

## 2. Presentation of case

An 85-year old female patient with dementia was referred to the surgical accident and emergency unit accompanied by her daughter, who was her legal guardian, on suspicion of having swallowed

her denture five days previously whilst in a nursing home. Physical examination was unremarkable though the patient was elderly and frail. There was no evidence of bowel obstruction. Her medical history included advanced dementia, incontinence and previous cholecystectomy and appendectomy. Admission blood tests were within normal limits. On plain abdominal X-rays the denture was located in the lower right quadrant (Fig. 1A). In the absence of symptoms the responsible surgeon arranged reassessment after two days, at which time the denture was seen on X-ray to be in the lower left quadrant (Fig. 1B). The patient's nurse was therefore asked to check the patient's stools for the denture.

The patient presented a further five days later, because the denture could not be found although the patient had a daily bowel action. A new X-ray (Fig. 1C) showed the denture in the same position as on the previous X-ray. A CT scan indicated the denture was within the bowel and raised suspicion of an obstructing colorectal cancer (Fig. 2A–C). Colonoscopy confirmed an obstructing rectal cancer 10 cm from the dentate line, with the denture impacted in the mouth of the tumor (Fig. 3). The situation was discussed with the family of the patient, and laparoscopic oncological resection of the tumor was recommended. Because of pre-existing severe faecal incontinence the operation was planned as a Hartmann's procedure. At operation the denture was found to be impacted in the

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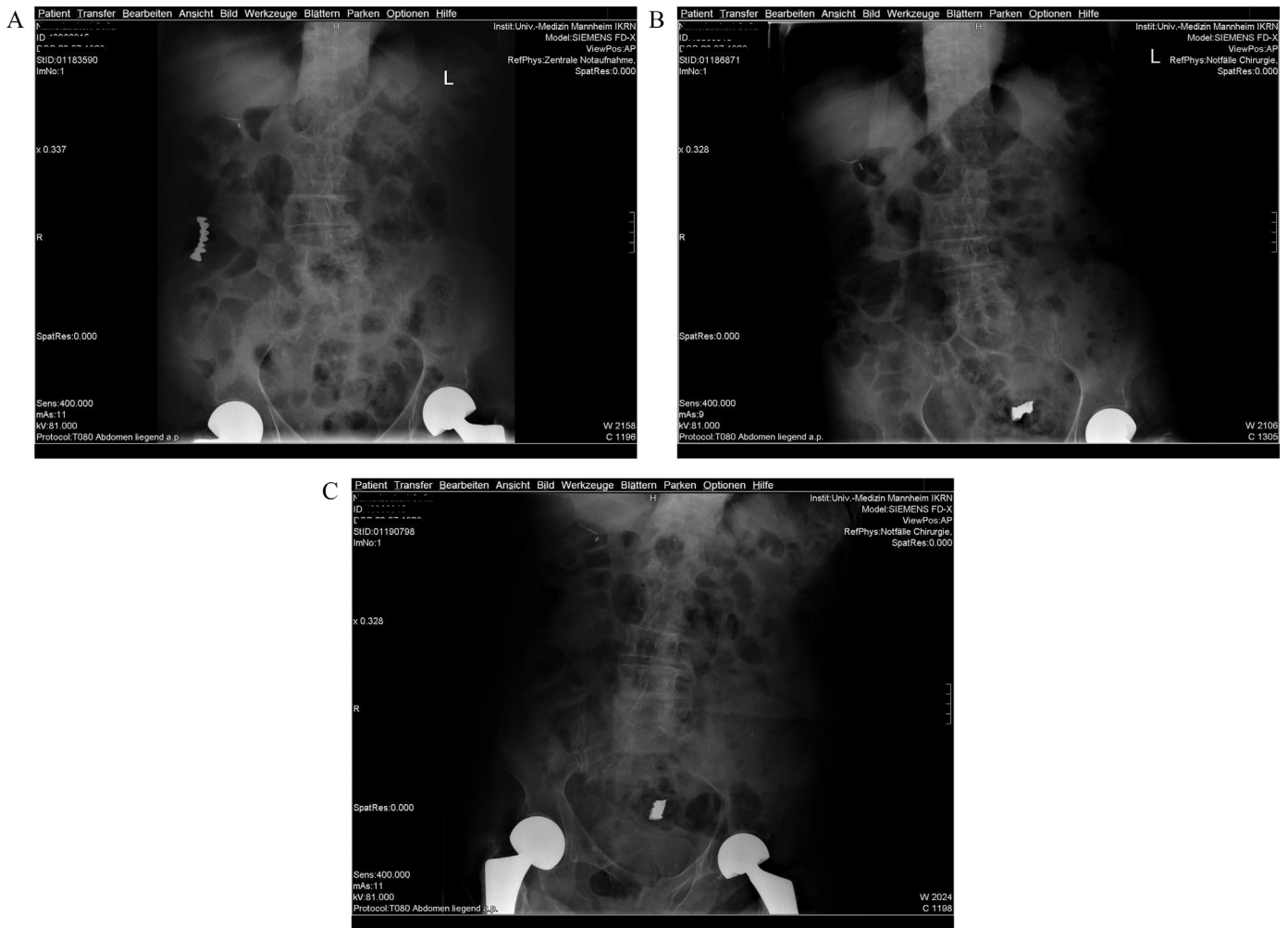


Fig. 1. Conventional abdominal X-ray on initial presentation (A), after two days (B) and seven days (C).



Fig. 2. A CT scan showed a foreign body within the lumen of the colon and raised suspicion of a colorectal cancer (images (A) with and (B) without contrast enhancement, and 3D reconstruction of the abdominal content (C)).

cancer (Fig. 4). The patient made a gradual but uneventful recovery and was discharged on the seventh postoperative day.

### 3. Discussion

Although ingestion of foreign bodies, dentures especially [3], is commonly encountered, the majority pass through the gastrointestinal tract spontaneously and uneventfully. 10–20% will fail to pass but less than 1% of the cases lead to complications [4]. Complications tend to occur at points of intestinal tapering or

angulation such as the terminal ileum and the recto-sigmoid junction. However, pathological conditions like tumors and inflammation can also lead to obstruction and further complications. In the colon, the most common conditions that might lead to obstruction are diverticular disease and cancer [3]. The incidence of colorectal cancer is higher in elderly patients and in the age group of our patient is 400 per 100,000 (Fig. 5). However, as patients with dementia are frequently not able to complain, typical symptoms of colorectal cancer might be underestimated in this group.

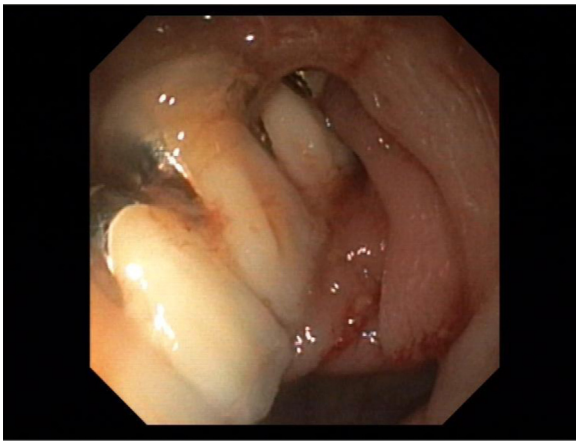


Fig. 3. Colonoscopy confirmed the presence of a colorectal carcinoma.

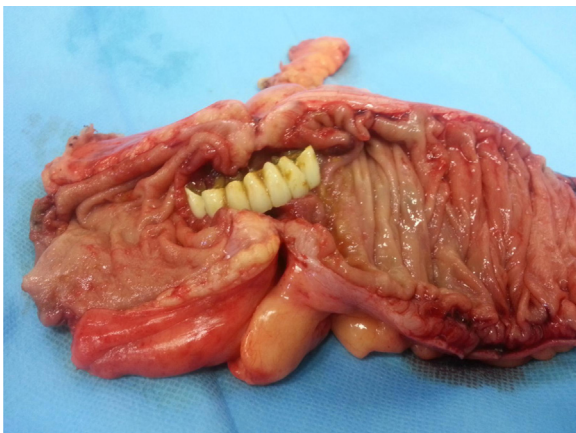


Fig. 4. After resection, the surgical specimen when opened was proven to contain the denture at the orifice of the tumor.

**4. Conclusion**

The case presented shows that loss of small everyday objects especially in elderly and institutionalized persons with mental limitations should lead to the suspicion of ingestion and the missing item should be sought. Step-up procedures of diagnosis adapted to symptoms and the patient’s status followed by close monitoring after proof of ingestion can prevent complications. Although the reported patient was aged and had a reduced state of health the necessary operation was tolerated well. This is in accordance with previous data that show that age is no general contraindication to operation [5].

**Conflict of interest**

There are no conflicts of interest.

**Funding**

There was no funding for this article.

**Author contribution**

FR: writing of the MS, JJ: intraoperative pictures and design of study, EK: proof reading and preparation of figures, MS: pictures from colonoscopy and proofreading; TH: pictures from medical imaging and proof-reading; KH: study design and proof-reading.

**Consent**

As your “guide for authors” states it is not necessary to give informed consent when there data is anonymous in case reports.

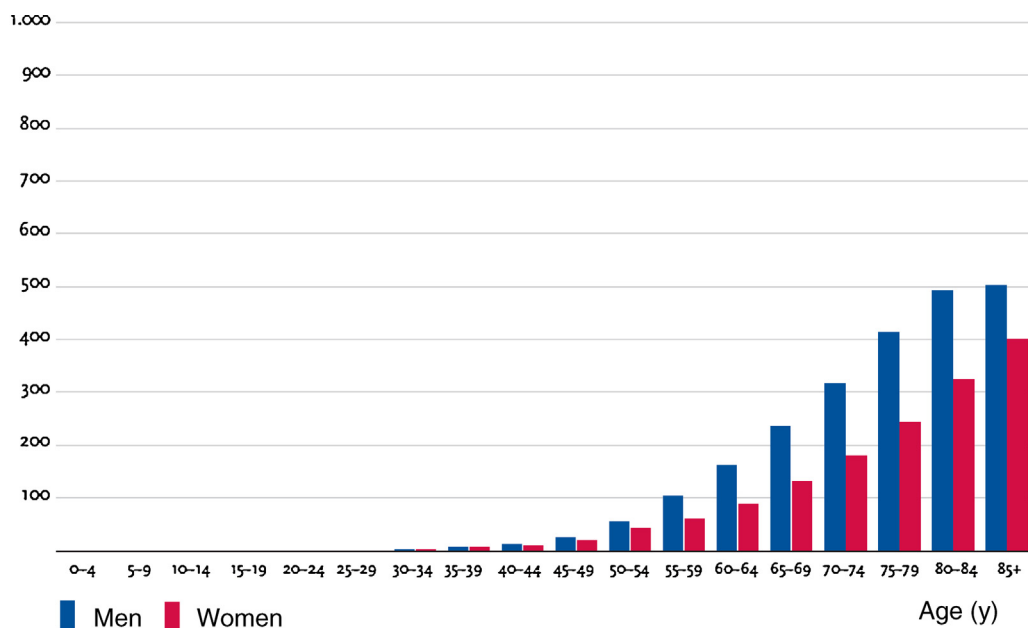


Fig. 5. Incidence of colorectal carcinoma in different age groups in Germany.

Source: adapted from [www.krebsdaten.de](http://www.krebsdaten.de).

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