CASE REPORT

Accidental Oral Administration of Povidone–Iodine Pessaries in an Elderly Woman: A Case Report

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Abstract

Background: Errors in medical prescription constitute a large and totally avoidable cause of distress and debility in the patient. Such errors, in addition to patient harassment also burden the healthcare system.

Case description: A 65-year-old woman presented with complaints of pain abdomen, nausea, and gastritis. She had undergone a hysterectomy 7 days back and on inquiry, it was revealed that she had been taking povidone–iodine pessary orally. Her liver and kidney test were normal with a slight increase in thyroid stimulating hormone (TSH). Upper gastrointestinal (GI) endoscopy revealed mild mucosal erosion.

Conclusion: This case highlights the importance of patient communication and correct and complete prescriptions. Special preparations of povidone–iodine must be prescribed carefully with a proper description of the route and method of administration.

Clinical significance: Povidone–iodine, if accidentally taken orally, can cause gastric corrosion and necrosis which can at times prove fatal. The iodine load in the povidone–iodine can cause hypothyroidism.

Keywords: Pessary, Povidone–iodine, Prescription writing.

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Background

Medical errors, even in the most advanced countries like the United States of America are the third leading cause of death.[1] Of all the medical errors, the errors pertaining to prescriptions contribute to a sizable number of adverse events leading to prolonged hospital stays, and temporary or permanent disability requiring medical intervention.[2] Occurrences of such events, contribute to the additional financial burden on the patients which leads to decreased patient trust and satisfaction in the health care system leading to defamation and compensatory lawsuits.[3]

Case Description

A 65-year-old female presented with complaints of pain epigastrium, nausea, and gastric upset. The patient had undergone a hysterectomy 7 days back which was uneventful. She had been discharged and was doing well. Going through her medical records it was learned that she had been prescribed povidone–iodine pessary for antisepsis. It was then known that the patient had been taking povidone–iodine pessary orally instead of vaginally since her discharge. The patient was investigated for any liver and kidney damage. Her thyroid profile was also ordered (Table 1). Abdominal examination showed tenderness in the epigastric region and her gastric endoscopy was ordered (Fig. 1), which demonstrated mild mucosal erosion. The gastric mucosal erosion was treated with Proton pump inhibitor omeprazole 20 mg twice a day and was given starchy food to convert iodine to iodide which is much less toxic. The patient was explained about the route of administration of povidone–iodine pessary. Her liver and kidney tests were unremarkable and her thyroid profile showed a slight increase in TSH whereas the T3 and T4 levels were in the normal range. During her follow-up period of 2 weeks, she responded well to her treatment and no other adverse event was noted.

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Discussion

The patient had been prescribed povidone–iodine vaginal pessary for the prevention of infection after her hysterectomy but due to communication failure she mistook it for oral medication. The patient's liver and kidney tests were in the normal range. Her TSH was slightly elevated and her T3 and T4, although normal on the lower side, which might have resulted from the body's response to increased iodine. Iodine is essential for the synthesis of thyroid hormone but increased iodine levels result in decreased thyroid hormone due to failure of organification of iodine. This phenomenon called the Wolff–checkoff effect is a protective mechanism to prevent hyperthyroidism in response to excess iodine exposure.[4] Exposure of the GI tract to excess iodine has been shown to cause corrosion and necrosis in many patients with iodine poisoning.[5] Our patient had only mild

Table 1: Laboratory tests of patient on presentation

Serum	*Patients value*	*Normal range*
TSH	6.0 µlU/mL	0.34–5.60 µlU/mL
T3	1.0 ng/mL	0.7–2.04 ng/mL
T4	7.1 µg/dL	5.74–13.03 µg/dL
SGOT	32 U/L	0–35 U/L
SGPT	40 U/L	0–45U/L
Urea	42 mg/dL	19–45 mg/dL
Cretinine	1.2 mg/dL	0.7–1.3 mg/dL

Q2 SGOT, serum glutamic-oxaloacetic transaminase; SGPT, serum glutamic pyruvic transaminase.

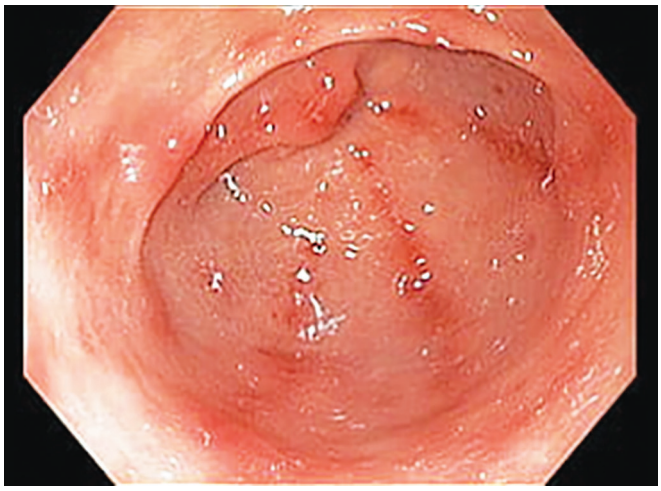

Fig. 1: Endoscopic image showing gastritis

gastric erosion because of the lower amount of ingested iodine. Moreover, the administration of starchy food converts iodine to iodides which are much less toxic.[6] Povidone–iodine is a common broad-spectrum antiseptic used for the treatment and prevention of wound infection. It exerts a long-lasting antiseptic effect as compared to tincture iodine due to slow absorption by soft tissue giving it an edge in longer surgeries.[7] In addition to routine pre and post-surgery skin asepsis it is used for vaginitis caused by candida, trichomonas, and other mixed infections and in eye infections such as neonatal conjunctivitis caused by Neisseria gonorrhea, Chlamydia, fungi, and viruses. Such wide use is made possible by varying concentrations (2.5–10%) across all its formulations (spray, scrubs, ointment, powder, gargles, pessaries, etc.).[8] Prescribing for such varied formulations of the same compound can be sometimes very tricky. Special care must be taken when such special formulations are prescribed along with other regular medications as it may confuse the patient. Moreover, sufficient time must be taken to explain the use and administration of such special formulations. In an Indian scenario where the patient number is large (especially in the government healthcare/hospital setting), it becomes all the more difficult to allocate sufficient time to explain the route and the method of administration. In most cases, the job of explaining the prescription to the patient is generally entrusted to the pharmacist or other paramedical staff who may not be as competent or as concerned.[9]

Clinical Significance

Special formulations of povidone–iodine must be prescribed cautiously as accidental oral intake of povidone–iodine can lead to potentially fatal gastric corrosion and necrosis. Thyroid dysfunction resulting from high exposure to iodine may especially be of importance in pediatric patients as it can result in mental retardation. Prescription errors that contribute to a large number of adverse medical outcomes can be avoided by following a few simple steps. A valid prescription should incorporate the following: The right drug, the right dose, the right duration, and the right route of administration along with the patient's particulars and date. All patients and their attendants should be considered "medically illiterate" and be explained in detail, in the language they best understand, all the above attributes of their prescription.

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