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## Clinical image

# Ghost tablets mimicking intestinal parasite



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A 67-year old man and a 71-year old woman consulted for the repeated shedding of bean-sized elements in their stools. Although not suffering from gastrointestinal complaints, both patients were worried and feared to be infested by intestinal parasites. The attending physicians suspected of helminth infection and ordered parasitological examinations of the fecal elements.

Submitted samples contained cuboid structures of yellowish to brown color, measuring approximately  $2.5 \times 1.0 \times 1.0$  cm (Fig. 1). Due to the soft consistency and lack of internal structures, we suspected that the amorphous elements represented so called “ghost tablets”, which are the remainders of long-acting medications. On request, both patients confirmed to recent prescription of extended release (XR) metformin. These formulations have to be swallowed whole and can remain intact during gastrointestinal transit. According to the product information, they can present as soft, hydrated masses in feces, which does not affect the efficacy of the

drug. Ghost tablets appear in up to 54 % of those taking XR metformin<sup>1</sup> and, in patients with psychiatric disorders, might lead to anxiety and paranoia, especially if caretakers are unaware of the phenomenon.<sup>2</sup> Due to the lack of information and education regarding this harmless side effect, the topic is frequently discussed in internet forums or medical lay press articles.<sup>3–5</sup> In Chile and other countries with endemic tapeworm infections, ghost pills might cause additional confusion, since their size and shape might resemble *Taenia proglottids*. In our parasitology laboratory, several of such samples have been submitted in recent years, all representing metformin XR formulations. Physicians should inform patients using metformin XR about this harmless side effect to avoid unnecessary anxiety and exams. Infectious diseases specialists and microbiologists should be familiar with the phenomenon of ghost tablets in patients reporting the shedding of suspicious stool elements.

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**Fig. 1 – Macroscopic appearance of metformin XR remainders (ghost tablets) as soft amorphous masses in fecal samples mimicking parasitic elements.**

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### Conflict of interest

The authors declare no conflicts of interest.

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