Uncommon Sites for Body Stuffing: A Literature Review

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Authors’ contributions

This work was carried out in collaboration between all authors. Author RP designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Author DA managed the literature searches. All authors read and approved the final manuscript.

ABSTRACT

Introduction: “Body stuffing” refers to concealment of illegal drugs within the human body to avoid arrest. Emergency physicians and law enforcement authorities should be aware of uncommon sites of concealment used to avoid detection.

Methods: A literature search of Medline (Pubmed), Science Direct and the Cochrane databases was done, for articles relating to body packing or body stuffing of illegal drugs and sites of concealment.

Results: A total of 55 full text articles and one abstract were reviewed after removing duplicates and non-relevant titles. Seventeen articles were included in the results. Cocaine was the most common drug. Body stuffing is more common among males in the 3rd to 4th decade of life. The majority of cases, 99% (1144 cases), involved concealment in the oral cavity or ingestion. Unusual sites for body stuffing reported were the external auditory canal (5 cases), the rectum (3 cases), the superior oropharynx and glans penis (one case each). Complications reported are fatal toxicity, aspiration and oesophageal obstruction.

Conclusion: Although uncommon, ear, nose and throat orifices have been used in body stuffing. Authorities and attending physicians should be aware that these orifices can be used to conceal drugs and proceed to a full otorhinolaryngologic examination if warranted.

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Keywords: Body stuffing; body packing; narcotics.

1. INTRODUCTION

The first reported case of internal concealment of illegal drugs was from Toronto in 1973 which described how a 21 year old man presented with intestinal obstruction after ingesting a condom packed with hashish from Lebanon [1]. The term ‘body packers’ or ‘drug mules’ is used to describe individuals using their bodies for internal concealment in smuggling illegal drugs across borders. When internal concealment is used to avoid arrest, the term ‘body stuffer’ is applied [2]. While both these terms refer to illegal concealment of drugs within the human body, there are differences in the sites of concealment, type and amount of drug concealed, presentation and management. The aim of this review was to identify uncommon sites of concealment in ‘body stuffing’ as the information could be potentially useful for law enforcement officers and medical practitioners dealing with such patients.

2. METHODS

Adapting the search strategy of PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) guidelines [3], a literature search of Medline (Pubmed), Science Direct and the Cochrane databases was done, for articles relating to body packing or body stuffing. (Fig. 1.) Additional abstracts and articles were reviewed based on references from the available full texts. There was no limit to the search. The following search terms were used either singly or in combination: body packing, body stuffers, body packers, cannabis, heroin, cocaine, foreign body, nasal cavity and unusual sites. Date of last search was 4th of October 2012. The search strategy and evidence tables are available from the corresponding author.

3. RESULTS

A total of 55 full text articles and one abstract were reviewed after removing duplicates and non relevant titles. The articles consisted of case reports, case series and reviews. The search did not yield any health technology assessment reports, systematic reviews or randomized controlled trials related to body stuffing or body packing. After reading and appraising the full text articles, seventeen articles were included in the results. The
breakdown of included studies was: nine case reports and eight observational review articles (Fig. 1).

4. SITE OF CONCEALMENT

There were a total of 1155 cases of body stuffing from nine case reports and eight retrospective reviews [2,4-19]. The majority, 1144 (99%) cases involved concealment in the oral cavity or ingestion [2,4 -16]. There were six cases of aspiration into the bronchus, five cases of stuffing into the external auditory canal, three cases into the rectum and one each in the superior oropharynx and glans penis [8,9,13,16-19].

5. DRUG TYPE

The most common drug concealed was cocaine with 965 (84%) cases [2,4-9,11,12,14-16]. This was followed by heroin with 89 (8%) cases [4,5,10,16]. Other reported substances include methamphetamine (56 cases), cannabis (13 cases) and diazepam (1 case) [5,9,13,16-19]. Cases of polydrug concealment have been reported [5,9].

6. GENDER AND AGE-GROUP

Age and gender data were not available in three of the eight retrospective studies [4,11,12]. Based on five retrospective reviews with a total of 305 patients; males were more frequently involved (69 – 85%) [2,5,9,10,13]. The reported mean age was as 34, 35 and 29 in three of the reviews [9,10,13]. Of the nine case-reports there were 12 males and three females. Ages ranged between 17 and 50 in the five case-reports where age data were available [6-8,14,15]. One study of 98 patients describes 10% of admissions were due to pregnancy or children [2].

7. COMPLICATIONS

Cocaine toxicity was reported in three studies while heroin toxicity in one [2,5,9,10]. Characteristics of cocaine toxicity include tachycardia, hypertension, agitation, arrhythmias, diaphoresis, chest pain and seizures [2]. Up to 55% of patients in a study of 98 patients with cocaine ingestion presented with tachycardia [2]. Heroin (an opiate) toxicity results in central nervous system depression, respiratory depression and miosis [10]. Nine percent of patients in a study of 65 heroin body stuffers showed symptomatology of intoxication [10]. There was 19 cases of death due to drug toxicity [6,9,11,14,16]. There were six cases of aspiration and one case of oesophageal obstruction [8,9,15].

8. DISCUSSION

Although the most common site of concealment for both ‘body-packing’ and ‘body-stuffing’ remains the abdominal cavity, other unusual sites have been reported for body-stuffing. These include the external auditory canal, the superior oropharynx and the glans penis [8,9,13,16-19]. ENT (ear, nose and throat) orifices accounted for 6 cases of body stuffing with 5 cases in the external auditory canal and one in the superior oropharynx. The authors of this review have managed a case of epistaxis which was discovered to be caused by concealment of narcotics in the nostrils. Smaller volume orifices and cavities within the body provide a suitable alternative for the lesser amounts of substances needing concealment for body stuffers. Body packers usually carry about 1kg of drug [20]. The maximum number of
cocaine bags in a body stuffer is 67 while in a body packer up to 217 bags have been reported [11,21]. The rectum and vagina have been reported as occasional sites for concealment in body packers [20]. The authors of this report did not find any report of body stuffing involving these sites in their search although Heinemann A et al. in their paper do refer to reports of rectal and vaginal body stuffing [22].

Most body packers are young men but recent literature describes pregnant women and children used to smuggle these narcotics [20,23,24]. The authors did not find any report of paediatric or pregnant body stuffers except for an observational study which describes 10% of their 98 patients were pregnant women or children [2]. Details were not available from the paper. The typical profile of a body stuffer from this review would be a person of male gender in the 3rd or 4th decade of life.

The most common drug in body stuffing is cocaine, which accounted for 84% of body stuffing cases in this review. This was followed by heroin, 8% and other substances. In body packing, both heroin and cocaine have been implicated as the leading illegal substances. [20] A review paper describes a geographical difference in prevalence, with cocaine smuggling higher in the United States while heroin was more common in Europe [22].

Unlike body packing where sophisticated multilayered latex packing is used to prevent leakage and absorption of contents, most cases of body stuffing involve poorly wrapped drugs, as stuffing is usually done in haste to avoid arrest. In a review of 98 patients, 30% of body stuffers did not wrap their drugs. Those who did wrap the drugs, used plastic, condoms or paper [2,20].

Imaging plays an important role in the diagnosis of body packing. Plain abdominal x-rays are usually performed for suspected individuals. CT scans and ultrasound scanning can be performed when diagnosis by plain radiographs is doubtful [20,25,26]. Plain x-rays however, have a limited role in body stuffing [2]. The limited value of imaging is due to the smaller quantity of illegal substances in body stuffing and the high incidence of unwrapped drugs.

Body packers are usually detained for suspicious behavior at ports of entry in target destinations or from complications of ingesting the illegal substances. The most common presentations are intestinal obstruction and toxicity from ruptured packets. Cases of sudden death have been discovered to be due to lethal overdose from leakage of concealed drugs [20,22]. In contrast, intestinal obstruction is rare in body stuffing. This again is probably due to the smaller quantity of substance ingested.

However toxicity and fatality have been frequently described in body stuffers. This is presumably due to the poor wrapping which frequently leads to mucosal absorption of the drug. There were a total of sixteen cases of death due to body stuffing in this review. Adverse events ranged from 6 – 55% [2,5,9,10].

Cocaine, the most common drug implicated with body stuffing has a half life of 60 – 90 minutes. Most signs of toxicity therefore occur immediately or soon after custody. Cocaine has sympathomimetic properties and toxicity is characterized by tachycardia, agitation, diastolic hypertension, diaphoresis, hyperthermia, seizures, mydriasis, dysrhythmias and cardiac arrest [2]. Suspected cases should be observed for six to eight hours [5,12]. Management consists of whole bowel irrigation, activated charcoal and intravenous benzodiazepines for agitated patients [2]. Heroin toxicity causes central nervous system
depression, respiratory depression and miosis. Management of heroin toxicity consists of intravenous naloxone [10].

Surgical intervention is less common in body stuffers. Based on this review, surgical procedures were only required in one patient with oesophageal obstruction and in those with impaction in the external auditory canal [15,17-19]. This is in contrast to body packing, where a laparotomy is often required when there is intestinal obstruction or in order to remove ruptured packets [20,27].

9. CONCLUSION

Based on this review, a typical body-stuffer would be a male in the 3rd to 4th decade of life with cocaine ingestion as the most likely substance. Observation for at least six hours is needed to elicit signs of toxicity. Drug enforcements authorities and physicians managing suspected 'body stuffers' should be aware that the ear, nose and throat orifices are a potential site for hiding illegal substances. In suspected cases, absence of illegal drugs in the gastrointestinal tract should warrant a complete physical examination including an ear, nose and throat examination.

CONSENT

Not applicable.

ETHICAL APPROVAL

Not applicable.

ACKNOWLEDGEMENT

The authors would like to thank the Director General of Health Malaysia for permission to publish this report.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES


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Peer-review history:
The peer review history for this paper can be accessed here:
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