
Abstract:

Factitious illness occurs when a caregiver exaggerates, falsifies, and/or induces symptoms of illness in a child. Emergency care providers are often in a unique position to evaluate these children and may be the first to recognize that factitious illness is present. The varied and unusual presentations of this entity present diagnostic challenges for the medical provider. Using a case-based approach, this article identifies important red flags that should alert the emergency care clinician to consider the possibility that a child is the victim of factitious illness.

Keywords:

factitious illness; Munchausen; child abuse

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Factitious Illness— Red Flags for the Pediatric Emergency Medicine Physician

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There has been perhaps as much time spent by professionals attempting to ascribe a title to this entity as there has been trying to diagnose and understand it. “Munchausen syndrome,” which bears the name of the famous German baron and raconteur, was so named to describe those patients whose medical complaints, such as the baron's stories, were dramatic, exaggerated, and often false.¹ In 1977, Meadow² reported the case of a 6-year-old girl who underwent multiple evaluations for recurrent urinary tract infections and hematuria. In the course of the diagnostic workup for these issues, the child was subjected to many intrusive and potentially harmful tests. It was ultimately determined that the child's urine samples, which contained blood, all had 1 other thing in common—they had all been handled by the child's mother. Within this case report, Meadow coined the term *Munchausen syndrome by proxy* to describe “parents who, by falsification, caused their children innumerable harmful hospital procedures.”²

Since publication of Meadow's initial article, there have been multiple case reports of children whom authors believed to have been harmed by the actions of their caregivers. A sample of these reports includes

- children receiving multiple sexual abuse evaluations in the absence of objective evidence suggesting that abuse has occurred;³
- a child being overtreated for asthma because of illness exaggeration by the caregiver;⁴
- a child with feeding issues and failure to thrive being given benzodiazepines to produce illness;⁵
- a mother reporting emesis in her child then presenting the physician with an emesis basin containing the commercial electrolyte solution available in the child's hospital room;⁵
- a child with polymicrobial bacteremia due to a mother injecting urine into an intravenous line;⁶ and
- children presenting with recurrent apneic spells due to purposeful suffocation by the caregiver, at times leading to death.⁷

The varied and often bizarre presentations of this condition have made it difficult for experts to come to a consensus regarding the definition of this entity and what types of cases may be labeled as such. In 1994, the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*, described 4 types of factitious disorders, one of which is labeled “factitious disorder not otherwise specified” and includes “factitious disorder by proxy.” *Factitious disorder by proxy* is defined in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*, as “the intentional production or feigning of physical or psychological signs or symptoms in another person who is under the individual's care for the purpose of indirectly assuming the sick role.”⁸ This definition presents challenges to the health care provider with respect to diagnosis and treatment. Is the pediatrician now responsible for determining the caregiver's motives for harming the child? Is this a medical diagnosis or a psychologic one? Does the physician diagnose this of the child or the caregiver?

In 1998, the American Professional Society on the Abuse of Children, a multidisciplinary professional organization, convened a task force to answer these questions and provide clarity surrounding this entity.⁹ The organization proposed 2 distinct diagnoses in an effort to distinguish between the act of abuse and the presumed motives behind the abuse. It was proposed that the act of abuse be titled “pediatric condition falsification” and would describe a medical diagnosis of the child that is appropriate when the child is repeatedly presented for medical treatment and when the history is fabricated or symptoms are induced through the actions of another. This is distinct from factitious disorder by proxy, which the group proposed would refer to the presumed motives behind the abuse and describe a psychologic condition of the caregiver. The American Academy of Pediatrics in

2007 offered the opinion that harm incurred to a child in this manner is simply child abuse that happens to occur in the medical setting and should be termed as such.¹⁰ Roesler and Jenny¹¹ provide an eloquent discussion of the history of terminology of this entity and propose that we apply the label “medical child abuse” to any situation when a child receives unnecessary and harmful or potentially harmful medical care at the instigation of a caretaker. Despite the efforts described above, there remains today much variability in the terminology used to describe these clinical situations. For the purposes of this article, we use the term *factitious illness* to describe clinical situations in which caregivers exaggerate, falsify, and/or induce symptoms in a child.

Determining the frequency of this entity has proven equally difficult. The existing medical literature consists almost entirely of case reports and case series with essentially no prospective studies that report the epidemiology of factitious illness. Although some report that factitious illness is a rare occurrence, others state that it is “fairly common.”^{12,13} Estimated prevalence rates have been quoted in the literature as being anywhere between 0.5 and 2 in 100 000 children, although these are almost certainly an underestimate of the true prevalence.^{14,15} Estimated mortality rates vary greatly and range from 9% to 31%.^{16,17} As discussed previously, factitious illness can have any number of symptom presentations and, hence, have different degrees of lethality. For instance, patients who have been suffocated or poisoned will have a higher mortality rate than those who are presenting with exaggeration of asthma symptoms.^{4,11}

The average time from onset of symptoms to diagnosis of factitious illness has been reported as 14.9 months in 1 literature review and 21.8 months in another.^{16,18} Despite this delay in diagnosis, the pediatric emergency care provider is often in a unique position to be among the first to recognize factitious illness. Common presentations of factitious illness include apnea, seizures, bleeding, vomiting, diarrhea, and fever, and the emergency department (ED) is often the point of “first contact” for many of these complaints. Using a case-based approach, we will highlight important red flags that should alert clinicians to consider the possibility that a child is the victim of factitious illness.

RED FLAG 1: MULTIPLE AND/OR RARE DIAGNOSES

Case 1

An 8-year-old boy presents to the neurology clinic of a tertiary pediatric hospital with his mother “to

establish care.” The child had been seen for years previously at a different tertiary pediatric hospital in the state. The mother reports that the child has been diagnosed with a mitochondrial disorder, Chiari malformation, inability to eat solid foods, asthma, recurrent aspiration pneumonias, and nighttime apnea. For these diagnoses, the child is currently taking a total of 13 medications. The mother's request to have the child referred to the local pulmonary and gastroenterology clinics for management of many of these disorders is granted. Over the next 4 years, there are over 350 telephone and in-person encounters with multiple subspecialists, almost all of which are prompted by symptoms that the mother reports that the child is experiencing. The child is hospitalized 6 times for various concerns and receives over 50 blood tests, 25 radiographic imaging studies, 5 video swallow studies, 3 long-term video electroencephalographic (EEG) monitoring sessions, 2 colonoscopies, and anal/colonic manometry—all of which are normal. The mother signs a consent allowing a subspecialist physician to contact the child's school. At that time, the school nurse expresses concerns that the mother's report of the child's symptoms and behaviors at home does not match what the nurse independently witnesses during the school day. For example, the mother has repeatedly requested that the school either chop or puree the child's foods because he is unable to eat regular food by mouth. The child, in fact, has a gastrostomy tube through which he receives supplemental nutrition at night. The nurse, however, has personally observed the child to drink water and eat vegetables and pieces of cooked meat without any difficulty. Because of these concerns, the child abuse pediatrician is consulted. After a thorough review of the documentation, it is determined that this child has been receiving unnecessary and potentially harmful medical care because of the history that mother has provided. A report is made to child protective services, and the child is placed in foster care. Within 1 month of placement, the child is off all medications, and the foster parents report no medical concerns with the child at all.

This case identifies a red flag often seen in cases of factitious illness—the child with multiple and/or rare diagnoses.

Sheridan¹⁸ conducted a literature review of 451 cases published in over 150 journal articles and found that victims of factitious illness average 3.25 medical problems, with a range of 0 to 19. This review as well as a previous review conducted by Rosenberg¹⁶ identified seizures, diarrhea, apnea, and fevers as the most frequently encountered

problems for these children, each of which are common symptoms with which a pediatric emergency physician may be confronted. These reviews also report many symptoms and diagnoses that are much less commonly encountered in children, such as anuria, bleeding, diabetes insipidus, Fanconi anemia, gallstones, immune deficiencies, and portal vein gas. There are, of course, cases where these and other rare diagnoses are legitimate. A child presenting with any one of these diagnoses, however, let alone multiple rare diagnoses, should prompt the health care provider to investigate further—request previous medical records, ensure that the proper testing has been completed to verify the diagnosis, and review the previous provider's plan of treatment. The emergency physician is uniquely positioned to begin this search for information for children who are hospitalized through the ED for further evaluation.

RED FLAG 2: INCONSISTENCIES BETWEEN WHAT YOU SEE AND WHAT YOU HEAR

In the above case, the child had received care in a different hospital network for years before arriving to the new facility with a disturbingly long list of diagnoses, including mitochondrial disorder, Chiari malformation, and nighttime apnea. The physician who first evaluated this child, although unimpressed by the patient's clinical appearance, accepted what the mother reported as fact and did not attempt to obtain medical records to verify what was being described. Review of these medical records, once completed, demonstrates that the child had a mitochondrial biopsy that was, in fact, “inconclusive,” neuroimaging without evidence of a Chiari malformation, and nighttime apnea that was diagnosed only by history provided by the mother and never confirmed with multiple observations in the health care setting. Furthermore, one of the last pieces of documentation in the previous hospital system indicates the health care provider's concern that “mother's stories don't match what I see.” It is reasonable to assume that had these records been reviewed at the time of the initial presentation, much of the unnecessary and potentially harmful care provided by the second hospital could have been avoided.

Although physicians are taught to listen to the parent or primary caregiver to obtain information about a child, it is important to remember that infrequently, this information might be erroneous. If the possibility of fabricated illness is not in the differential diagnosis, the diagnosis cannot be made.

Consider the following case that offers an example of this particular concern.

Case 2

An 11-month-old boy presents to the ED with his foster mother with reported seizure activity. The child has a history of child physical abuse that was determined after an evaluation was completed by the hospital's child protection team. At that time, the child was removed from the home and placed in the present foster care home. The foster mother reports that the child has a history of "shaken baby syndrome," developmental delay, feeding intolerance, and gastroesophageal reflux. She states that he is currently being evaluated for cerebral palsy. He has had multiple ED visits for reported emesis and feeding issues that eventually prompted placement of a gastrostomy tube and subsequent placement of a gastrojejunostomy tube for continuous feedings to be administered. The foster mother reports that he has multiple daily seizures at his baseline that consist of staring spells and jerking movements of his legs. This patient was started on an antiepileptic medication at 4 months old based on foster mother's reports of shaken baby and seizure activity. The foster mother reports that he is having an increase in his seizure frequency. The child was recently hospitalized for video EEG monitoring, which did not identify any seizure activity. The foster mother is upset that the child was discharged and states the child clearly needs to be on a new antiepileptic medication. On examination, the child appears in no distress, and aside from the presence of the feeding tube, appears healthy with no apparent seizure activity. Recent testing includes normal genetic testing; normal electrolytes, renal function, and liver transaminases; normal magnetic resonance imaging of the brain; and comprehensive testing for metabolic and mitochondrial disorders, which were all within normal limits.

The astute ED physician becomes concerned that there does not seem to be medical evidence that the child is having seizures at the frequency reported by the foster mother, especially given the recent hospitalization and 72-hour video EEG monitoring not identifying seizure activity. The physician does a quick review of the chart and discovers that although the child does have a history of multiple rib fractures and bruising at 5 weeks old, he does not have a history of abusive head trauma as has been portrayed by the foster mother. The neurology team is consulted and eventually admits the child for video EEG monitoring. Because of concerns that the foster mother is fabricating illness, a consultation

was placed with the hospital's child protection team. A comprehensive review of the medical record was completed. Throughout the medical record, it was documented that the foster mother has been reporting that the child was a victim of shaking with resulting head trauma, manifesting in his medical problems of seizures, feeding intolerance, and a potential diagnosis of cerebral palsy. However, all head imagings, including initial computed tomography at 5 weeks old on initial presentation, did not identify any signs of abusive head trauma. In fact, the child was initially diagnosed by the child protection team with physical abuse due to bruising and multiple rib fractures alone. However, because of the patient being in foster care, which is presumably a "safe" environment, all health care providers in the past had taken the foster mother's reports as definitive diagnoses. On further review, it was discovered that the feeding tubes were placed because of the foster mother's reports of feeding intolerance and emesis but without objective evidence that this was occurring. The child had not begun recommended physical or occupational therapies due to the foster mother's reports that he had not been cleared by the orthopedics team because of his history of fractures, although this was not documented within the medical record. A report was made to child protective services, and an investigation was completed. This foster mother had reported multiple times to the medical team that she planned to adopt this child. Although a caregiver's motive is inconsequential when determining if a child is a victim of child abuse, in this case, the foster mother appeared to be attempting to make it seem as if the child was medically complex to discourage extended family members from wanting to assume care of the child. Child protective services removed the child from the foster mother's care and placed the child within a different foster home. Within 6 months of being removed, the child was weaned from antiepileptic medication without any reported seizure activity; he quickly transitioned to all oral feedings, and the feeding tubes were removed; he began physical and occupational therapies and has caught up in his developmental milestones.

These cases emphasize the need for all providers, including those in the ED, to consider whether the diagnoses being reported by the caregiver are indeed correct. Whenever possible, all symptoms and diagnoses a caregiver reports should be substantiated by laboratory or test results. Although it is unlikely that the emergency physician will have the time to conduct a thorough review of previous medical records during an ED visit, even a simple

review of the medical record can often identify potential inconsistencies that may prevent further unnecessary testing and treatments.

RED FLAG 3: RECURRENT AND ABRUPT ONSET OF SEVERE SYMPTOMS

Case 3

A 19-month-old, born at 34 weeks estimated gestational age, presents to the ED with several days of vomiting. On clinical examination, child is noted to have moderate dehydration. Initial glucose is 34 mg/dL. He receives 40 mL/kg of normal saline (NS) and 2 boluses of D5-NS with normalization of glucose, and he is admitted to the infectious disease service for rehydration and observation of a presumed viral gastroenteritis. On hospital day 2, the child is noted by the nurse to be “jittery.” Blood glucose level is checked and found to, again, be low at 35 mg/dL. The child is given glucose orally with normalization of his blood glucose. Family history is significant for a mother with type 1 diabetes mellitus. Although the mother denied the possibility that the child could have access to the insulin or any other medication, consideration is given to exogenous insulin administration, and on hospital day 2, insulin and C-peptide levels are sent; these studies were normal. The child was discharged home on hospital day 3 with the diagnoses of viral gastroenteritis and dehydration. Two weeks later, the child presents to the ED with abrupt onset of tremors in his hands and upper extremities 60 minutes before presentation. The mother reports that the child had been in his normal state of good health earlier that day, including eating a full breakfast that morning. The mother recognized the tremors as a possible symptom of hypo- or hyperglycemia and checked the child's glucose using her glucometer. The child's blood glucose was 50 mg/dL. The mother contacted the hospital triage nurse by telephone, who instructed that the mother feed the child and repeat his glucose. Ninety minutes later, the child's glucose was 60 mg/dL. He continued to have tremors of the upper extremities, and the mother now believed that the child was lethargic. Upon presentation to the ED, the child's glucose was 24 mg/dL. The ED physician repeated a C-peptide and insulin level at that time. The child was then given glucose orally with little change in his blood glucose level. The child was then given a bolus of D10-NS, started on intravenous fluids at 1 1/2 times maintenance, and admitted for further evaluation. On hospital day

2, results of the C-peptide and insulin levels drawn in the ED became available. The insulin level was 56 μ U/mL, and C-peptide level, 0.6 ng/mL. These laboratory values were diagnostic of exogenous insulin administration. A report of suspected abuse was made to child protective services, and the child was placed into foster care.

In the above case, the child was found to have an elevated insulin level and a low C-peptide level in the setting of hypoglycemia. C-peptide is a protein produced endogenously along with insulin. If the child's hypoglycemia was the result of an endogenous source of insulin, it would be expected that the C-peptide level would be elevated. The child's C-peptide level was minimal, which indicates that the insulin was of exogenous origin. This case is not unique in that there exist several case reports of children receiving exogenous insulin and other hypoglycemic agents from a caregiver.¹⁹⁻²² What this case highlights, however, is the essential role of the emergency care provider in making the diagnosis of factitious illness. In the above case, the so-called critical sample must be obtained during the hypoglycemic episode. Waiting until the child is stabilized and normoglycemic, as occurred in this case during the child's first hospitalization, will result in misleading normal results and likely exposure to additional harm. Similarly, ED physicians and nurses are in a unique position to diagnose many manifestations of factitious illness at the time of acute presentation, each of which become more difficult to diagnose with the passage of time. Administration of medications such as antiepileptics, antidepressants, antihistamines, syrup of ipecac, and clonidine has been reported.²³⁻²⁸ There also exist case reports of children being administered various toxins such as insecticides, salt, and household cleaning products.²⁹⁻³² Knowledge of pharmacologic effects of various medications and recognition of toxidromes may be the key to identifying a factitious illness in the ED setting.

This case illustrates a common presentation of factitious disorder by proxy where the perpetrator actively produced symptoms. In 1 literature review, symptom induction, such as poisoning or smothering, occurred in 57.2% of cases.¹⁸ Other presentations can involve symptom fabrication when the caregiver is dishonest about the presence of symptoms or causes the appearance of symptoms through deception. The following case illustrates the importance of having a high level of suspicion to make the diagnosis when there is a reported onset of dramatic symptoms without objective evidence to support the subjective complaints.

Case 4

A 20-month-old boy with a history of reported seizures presents to the ED with a chief complaint of blood in his diaper. The mother reports that the toddler has had 2 diapers full of bright red blood over the past 3 hours before presentation. The mother presents the ED staff with one of these diapers, which is noted to have a large amount of bright red blood. Physical examination of the child is normal. Several studies, including a catheterized urine specimen for analysis, electrolyte panel, and renal ultrasound, are completed. Renal function and electrolytes are found to be normal. A renal ultrasound identifies 2 normal-sized kidneys and bladder without evidence of obstruction or other congenital abnormality. Urinalysis identifies no leukocyte esterase or hemoglobin level. Likewise, microscopic urinalysis identifies no white blood cells or red blood cells. Although in the ED, the nurse collects a wet diaper from the child with no gross evidence of blood. Shortly after this, the mother comes out of the restroom with the child, reporting he has had another grossly bloody diaper, which she presents to the nurse. In the bathroom, an empty specimen container labeled with the child's name is found on the floor by the nurse. A report of factitious disorder by proxy is made to law enforcement and child protective services, and the child is emergently removed from the mother's care. In this case, the initial diaper brought in by the mother was turned over to law enforcement, and an investigation was completed. The blood in the initial diaper was identified as belonging to the mother. She was subsequently charged with child endangering and was arrested.

This case, although seemingly obvious, was diagnosed as child abuse due to the high level of suspicion by the medical providers. Looking back at this child's history, he had a long history of reported seizures that had never been witnessed by anyone but the mother. A younger sibling had presented in the past with the mother with a similar complaint of blood in the diaper and had undergone an evaluation for sexual abuse due to this claim, although the blood was never witnessed by a medical provider. This sibling had a history of reported seizures based on the mother's reports and was on several medications for this, although multiple video EEGs and brain imaging were normal. The sibling subsequently died mysteriously at home at 6 months old under the mother's care after a recent hospitalization had found the child to be healthy. In a literature review, Sheridan¹⁸ found that 61.3% of siblings of index children either had symptoms that were similar to those of the victims or symptoms that

could be of suspicious origin. This case demonstrates the need to question abrupt onset of severe symptoms when the history of symptoms of disease do not seem medically plausible, especially in a child with a sibling with similar unusual symptoms who has died under suspicious circumstances.

RED FLAG 4—DO NOT IGNORE ABNORMAL LABORATORY RESULTS

Case 5

A 6-month-old boy presents to the ED for poor weight gain. The child was born full term without complication with a birth weight of 3.74 kg. The mother reports that the child's pediatrician had concerns with the child's poor weight gain in the first 2 months of life and advised the mother that she discontinue breast feeding. Since that time, the child has been taking varying formulas with varying energy densities—most recently, on a 27 kcal/oz preparation reportedly taking 5 oz every 3 hours. The child lives with his mother, father, and 4 older siblings. The mother and father are both employed. The mother, notably, is employed by a hospital as a patient care advocate. Family mental health history is significant for maternal grandmother with a history of schizophrenia and a paternal grandfather who committed suicide. The parents deny substance abuse and past children's services or legal involvement. Previous outpatient workup includes normal stool studies, complete blood count, electrolytes, serum ammonia and amino acids, and urine organic acids. The only abnormal test noted at this time is a urinalysis with a low specific gravity. The child is admitted for observation and further evaluation. During the admission, the child has a chest x-ray, echocardiogram, sweat chloride test, head computed tomography, urinalysis, electrolytes, thyroid studies, and liver function tests. The child gains 190 g over 3 days and is discharged home at 4.92 kg with plans for outpatient follow-up. At the prompting of the primary care physician, the child returns to the ED approximately 3 weeks later, now weighing 4.89 kg. A comprehensive metabolic panel and urinalysis are completed, both of which are normal except for a low specific gravity noted on the urine. The child is again admitted and again has normal stool studies, liver function tests, and thyroid studies. The child also has a normal immunoglobulin panel and normal urine drug screen. The child gains 240 g over 4 days and is discharged home at 5.13 kg. The child returns to the ED 14 days later, again at the direction of the

primary care physician. At this time, the child still weighs 5.13 kg. The child is admitted for supervised feeds and additional testing, which this time includes a normal complete blood count, iron studies, liver function tests, thyroid studies, and a cortisol level. The urinalysis again is normal except for a low specific gravity. A liver ultrasound is ordered, which shows questionable hepatocellular disease and hepatomegaly, and the child is scheduled for a liver biopsy. The day before the biopsy, the patient care attendant who was supervising the child's feeding noted that the mother was having difficulty getting the child to take a bottle and noted that the formula appeared dilute. The child's formula is kept in large "stock" bottles in a community-type kitchen accessible for parents to get refreshments. The nursing staff had been pulling small amounts (3-4 oz) of formula from this stock bottle and giving it to the mother to provide the feed under observation. The stock bottle was examined and also appeared to be diluted. A new batch of formula was prepared and sent to the floor. Nursing staff were asked to conduct serial specific gravity tests on the newly prepared formula every 6 hours. Initial specific gravity on the formula was measured at 1.060. A repeat specific gravity conducted approximately 6 hours later was now down to 1.025, indicating that the formula was being diluted. Similar testing was conducted on a separate patient's formula on this same nursing unit, and testing demonstrated specific gravities that were unchanged after 6 hours. The mother was confronted with these concerns and denied tampering with the formula. A report was made to child protective services and law enforcement of suspected abuse, and the mother ultimately pled guilty to child endangerment.

This case highlights a potential bias in medical care to systematically "ignore" those laboratory tests that are not felt to be significant. For instance, when reviewing a complete blood count, a provider may focus on the hemoglobin level, white count, and platelet count and, if these are normal, ignore the red blood cell distribution width that may hint at inflammation or renal insufficiency. When reviewing a comprehensive metabolic panel, a provider may focus on normal individual values only to miss a subtle anion gap and its potential implications. Likewise, in this case, a repeatedly low urine specific gravity was overlooked as unimportant likely because the providers were focused on other indicators of pathology, such as presence of nitrite, leukocytes, and/or blood. The repeatedly low urine specific gravity in this case was the only clue early on that the child's formula was being diluted. Because it was not noticed and/

or acted upon, the child was subject to repeat testing and multiple hospital admissions that may have been avoided. Had this not been noticed when it was, the providers' next steps included a liver biopsy—an invasive procedure with the potential for significant complications.

SUMMARY

Factitious illness is an insidious form of abuse where few cases present in a similar manner. Although many consider the diagnosis to be one made only after a comprehensive and time-exhaustive medical review by experts in child abuse pediatrics, the reality is that ED clinicians are in a unique position to identify many of these cases. Recognition of the child who presents with multiple rare diagnoses, taking time to verify what the caregiver is reporting, recognizing abrupt onset of symptoms without reasonable medical explanation, and attention paid to all available clinical data may allow the emergency medicine physician to diagnose factitious illness at the time of presentation and avoid subsequent morbidity and mortality. ☒

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