INTRODUCTION

Anorexia nervosa (AN) is a disorder characterized by three essential criteria according to the DSM-5: persistent energy intake restriction, intense fear of weight gain (or persistent behavior that interferes with weight gain), and a disturbance in body image.[1] These behaviors and perceptions lead to a significantly low weight, typically below 18.5 kg/m^2. This disease is far more common in females, with a lifetime prevalence of up to 4 percent.[2] Though it may not be a particularly common psychiatric disorder, it is among the most dangerous. A 2011 meta-analysis found the mortality rate of anorexia nervosa to be over 5 times greater than that of the general population, with over 20% of these deaths being due to suicide.[3]

The malnutrition inherent to the disease can lead to myocardial atrophy, amenorrhea, osteopenia, generalized brain atrophy, pulmonary complications, and potentially fatal electrolyte abnormalities.[4] Furthermore, treatment per se can be fatal via refeeding syndrome when energy intake is rapidly increased. Aside from the risk of refeeding syndrome, treating malnutrition is simple: feed the patient. Unfortunately, malnutrition is merely a complication of this fundamentally psychiatric disorder.

There are limited interventions available for treating the psychiatric aspects of this disease. In an inpatient setting, the intuitive short-term goal of treating a patient hospitalized due to low BMI would be to increase their BMI as rapidly and as safely as possible in order to prevent further organ damage and complications. However, the long-term utility of this approach is questionable without addressing the underlying relationships with food and body image—the patient could very well return to their baseline weight after discharge.

To further complicate the acute treatment of severe malnourishment in AN, these patients, by definition, pathologically avoid the treatment (i.e. increased energy intake), and they fear what medical professionals would consider the desirable outcome (i.e. increased weight). Herein arises a great ethical dilemma: if an anorexic patient refuses treatment, should they be fed against their will? Despite decades of thought and discussion, there is no consensus to this question.

Thus, in the severely malnourished and deluded patient suffering from AN, we face several potentially competing treatment goals. The patient's goal is to maintain or decrease their weight; the medical team's goal is to increase their weight and stabilize their metabolism; the psychiatrist's goal is to help the patient develop a healthy body image and relationship with food. While guidelines and expertise can direct the care team in achieving their goals, implementation of these strategies can quickly deviate from the optimum in the face of patient obstinance, ethical concerns, and inadequate mental health resources.

CASE SUMMARY

A 37 year old female presented to the ER via EMS with weakness and nausea. Her mother called 911 after the patient was not answering the phone, and she was found on the floor of her home too weak to stand, with a blood sugar of 23 mg/dL. She had a BMI of 12.8 kg/m^2 and was unable to recall the last time she ate, but she denied any history of disordered eating. Her family at bedside, however, stated that she did have an eating disorder and that she would go long periods without eating.

Provider discussions of this patient's low weight were first documented in 2013, 9 years prior to this emergency room visit. Her grandmother had brought her to see a family practitioner for concerns about her low weight. At the time, the patient was two years post-divorce and had been treated for depression. The patient denied any restrictive eating patterns at the time, but agreed to increase her intake to appease her grandmother. At the time, her BMI was 19.0 kg/m^2. She had minimal medical follow-up for several years after this, until a clinic visit in September 2021 with a 4 week history of cough and new-onset right-sided abdominal pain. She reportedly lost 15 pounds in the prior month due to her illness; her BMI was 13.0 kg/m^2 at this time. She was sent to the emergency department and admitted to the hospital for treatment of bilateral pneumonia and bilateral ureteral stones with right-sided hydronephrosis. During this stay, she was very reluctant to discuss her weight or eating habits with the psychiatry team or hospitalists. She attributed her low weight to her recent illness. Specialized inpatient treatment for her anorexia nervosa was recommended, but she declined. She was sent home after two days following treatment of her pneumonia and nephrolithiasis. Over the following six months, she was admitted to the hospital a handful of times due to recurrence of her pneumonia, likely related to hypogammaglobulinemia secondary to malnutrition. Attempts were again made during these stays to address her body weight, but she continued to deny that there was an issue and refused the recommendation for inpatient eating disorder treatment. She would agree to schedule outpatient appointments with counselors specialized in eating disorders, but she never followed through with this. She had partial custody of her high-school son, and she also ran an in-home daycare where she was responsible for the care of young children. Her fragility and evidently deluded thought patterns led to concerns about the safety of these children.

After gathering pieces of this background history, physical exam during this ED visit revealed a cachectic woman with apparent bradycardia and mild, diffuse abdominal tenderness. She was 152 cm tall and weighed 29.7 kg, with a BMI of 12.8 kg/m^2 . Her pulse was in the 40's with an initial blood pressure of 105/65 mmHg and a later measurement of 84/72 mmHg. Laboratory studies in the

emergency department revealed a blood glucose of 23 mg/dL, mild normocytic anemia, hyponatremia, hypoalbuminemia, elevated BUN, and low creatinine. EKG showed sinus bradycardia at a rate of 36/min with a junctional rhythm. Her hypoglycemia was promptly corrected in the ED, but the decision was made to admit her to the cardiology floor on telemetry to treat for bradycardia, hypotension, and severe anorexia.

Within her first 24 hours of admission, the patient began to refuse all treatment, medication, and nutritional support, despite her vital instability. She was described as irritable, angry, argumentative, confrontational, and she would repeatedly swear at staff and refuse to cooperate with any discussions, especially those regarding her weight. Family conflict was apparent at the bedside. She made comments about not caring whether she lived and expressed a desire to leave against medical advice, and so she was placed on a mental health hold with suicide precautions and a constant observer. Over the next few days she continued to have metabolic derangements, including glucose levels of <10 mg/dL, yet she was inconsistent in agreeing to treatment. The county's Board of Mental Illness ordered her to be discharged to a local behavioral health facility when medically stable, and she was prepared for discharge to this facility on hospital day 5. However, they refused her transfer due to her unstable condition, as this facility was for psychiatric patients only and had minimal capabilities for managing medically complex patients. It became clear that her management would need to continue at the current hospital.

The patient became increasingly frustrated with her lack of control over her situation and disposition, and in an attempt to grant her a semblance of control, her mental health hold and suicide precautions were lifted over the following week. There was, however, a mutual understanding that the hold could be reinitiated at any time if there were concerns regarding her safety, compliance, or attempts to leave against medical advice. Though a hospitalist initially declared her to not have decisional capacity, the consulting psychiatrist and mental health team later deemed her decisional. In this time she also began a trial of fluoxetine for her reported anxiety.

Despite documentation of seemingly sufficient oral intake, the patient continued to lose weight with her BMI dropping to 11.7 kg/m^2 by admission day 12. There were questions of whether she was obfuscating how much food she was eating or if she was secretly purging in the bathroom, though there was no evidence or history of purging behaviors. It was repeatedly noted that she would order large plates of food, graze at it all day, and seemingly display her large platters of food to staff**,** causing the nutrition team to have difficulties quantifying her caloric intake. She would refuse to let any staff accompany her to the bathroom. After days of discussion, she agreed to have a nasogastric tube placed for supplemental feeding with the mutual goal of accelerating her readiness for

discharge. She was told that she could be discharged home when her BMI reached 15 kg/m^2. Nevertheless, after starting her tube feeds at 1152 kcal/day, she continued to lose weight for several days, with her BMI reaching a nadir of 11.4 kg/m^2 on admission day 17. It seemed that the nutrition team was being conservative with her caloric intake due to concerns of refeeding syndrome, as well as overestimating her independent oral intake. At this point, after reviewing literature on refeeding syndrome, the hospitalist team made the decision to override the nutrition team recommendations on tube feeding rates, and work on increasing to 2,000 and then 3,000 calories per day. Unsurprisingly, the patient was quite resistant to this idea. Nevertheless, the rate and concentration of her tube feeds were gradually increased over the next week.

Over the following weeks, she slowly continued to gain weight, though there was continued opposition to increasing the feed rate, and she only ever achieved a tube feed intake of 1620 kcal/day. It was recognized that if her feeds were pushed further than she was agreeable to, then she would be able to remove her feeding tube or otherwise impede her caloric intake. In this time, her providers became more unified in their approach to her care. She was regularly visited by the mental health team, her weight measurements were hidden from her, and her access to the notes in her chart was blocked so that she was not able to check her weight. There was some debate over the ethics of hiding health information from the patient if she was deemed medically competent. The recommendation for specialized inpatient treatment was an ongoing discussion with her, though she was never agreeable to this. It is worth noting that the nearest facility of this type is in a neighboring state, but she was never clear about her reasons for refusing the treatment. Instead, she agreed to closely monitored outpatient followup with counselors specializing in eating disorders after her discharge, as well as weekly weight checks. Her electrolytes and vital signs stabilized after she began to gain weight, and her lab draws were reduced to once weekly. She was discharged after 54 days in the hospital when her BMI reached 14.8 kg/m^2. Despite this nearly two-month admission for her low weight and countless discussions from hospitalists, mental health counselors, psychiatrists, psychologists, and nutritionists about the nature and severity of her condition, she consistently failed to display adequate insight into her eating disorder. She continued to blame her weight on her other medical issues, failing to recognize the clear connection between her eating habits, low weight, and poor health.

DISCUSSION

THE NATURE OF ANOREXIA NERVOSA

The DSM-5 describes three fundamental characteristics of anorexia nervosa: "persistent energy intake restriction; intense fear of gaining weight or of becoming fat, or persistent behavior that interferes with weight gain; and a disturbance in self-perceived weight or shape." This definition encompasses a broad spectrum of disease severity, from slightly underweight patients with mild body image issues to those with severe delusions who are on the verge of starving to death. In these more extreme cases, difficult barriers to treatment arise. First, their low weight and the associated complications may warrant emergent medical stabilization and inpatient refeeding to promote weight gain. However, these patients pathologically fear weight gain, and acquiring their consent to be fed can become a battle. Furthermore, they may absolutely refuse to acknowledge that they are underweight or have an eating disorder, which complicates every discussion with them about their treatment. As with our patient, attempts at productive conversations often damaged patient trust and incited reluctance to cooperate with treatment.

COMPETING GOALS OF CARE

Psychiatric care of the patient with AN focuses on addressing the underlying psychological factors contributing to the disorder. The long-term goal is to help the patient cultivate a healthier body image and a more balanced relationship with food. This involves working through the cognitive distortions and irrational fears that often characterize AN, such as the intense fear of weight gain. Another key goal for the psychiatric team is to help the patient gain insight into the negative consequences of their behaviors and to motivate them to engage in treatment. These interventions are complicated and delicate, and it may take months or years of therapy and psychiatric care for a patient to tangibly improve.

In contrast, the medical team has more immediate goals when working with a severely malnourished patient suffering from AN. Their focus is on stabilizing the patient's physical health, which often involves addressing acute medical complications resulting from malnutrition, such as hypoglycemia, electrolyte imbalances, bradycardia, and other organ dysfunctions. A major goal addressed by the hospitalist team was restoring the patient's weight to prevent further organ damage while closely monitoring the patient for medical complications that might arise (e.g. refeeding syndrome). Addressing the acute medical issues in our patient required a months-long hospitalization, placement of a feeding tube, and numerous tense and unproductive conversations about the patient's eating disorder. It is not a stretch of the imagination to say that these interventions, though necessary, could be counterproductive in the patient's fragile journey to a positive self-image and healthy relationship with food.

Due to these competing medical and psychiatric interests, collaboration between everyone involved in the patient's care is crucial. The short-term medical goals set by hospitalists provide a foundation upon which psychiatric interventions can be more effective. As the patient's physical health stabilizes and they feel stronger and more energized, they could conceivably become more receptive to addressing the psychological aspects of their disorder. Similarly, psychiatric interventions can support the patient's overall well-being and improve treatment compliance, which in turn aids in overall medical care. Our case sheds light on the complexities of holistic patient care, underscoring the importance of an integrated approach that considers both immediate medical needs and the longer-term psychological aspects of recovery.

While the psychiatry and medical team can likely agree on a productive and unified plan of care, the situation becomes dramatically more complicated if the patient disagrees. Reluctance to gain weight and distorted perceptions are inherent to AN, and this can lead to the patient refusing to cooperate with recommended treatments and feeding. In severe cases, the question of involuntary feeding arises quickly. While this may be ideal from an acute medical standpoint, this might not be ideal psychiatrically, especially since a desire for control is central to the pathology of AN.

COMPULSORY TREATMENT

Perhaps the most difficult aspect of caring for the reluctant patient is determining when or if compulsory treatment becomes appropriate. There is no clear consensus to this ethical dilemma despite having been discussed at length in the literature for decades. Modern medicine places patient autonomy at the center of patient rights, and the long tradition of paternalism in healthcare has fallen out of favor in place of the shared-decision making model.[5] The principle of autonomy is so revered that some thinkers have argued that a patient with AN should never be treated against their will.[5,6] Beyond the axiomatic supremacy of patient autonomy, these writers propose that the benefits of preserving rapport with patients will lead to better long-term outcomes, that encroaching on fundamental patient rights opens the door to clinicians abusing power, and that patients with eating disorders meet the conditions for decision-making capacity.[5,6]

In contrast, many argue that scenarios exist where violating the autonomy of a patient with AN is justifiable if they lack the capacity to make such important decisions. Herein arises the case for "justified paternalism." In essence, since compulsory treatment violates a patient's autonomy, there must be a strong justification for doing so. One framework suggests that intervening against the patient's will requires four prerequisites:

a. Imminent physical harm is likely.
b. Intrusion probably protects the person from harm.
c. The person is likely to be thankful for the treatment at a later time.
d. The intrusion is generalizable, in the sense that those supporting it would wish the same on themselves.[6,7]

In the context of AN, one can imagine some scenarios that meet these criteria for compulsory treatment and others that do not. In our patient, it seems clear that criteria (a), (b), and (d) were met. However, especially in hindsight, it is less clear that criterion (c) was fulfilled. If there existed a straightforward and highly successful treatment available for curing the distorted thinking that defines anorexia nervosa, then perhaps providers could be confident that the patient would be thankful for treatment someday. One study assessing perspectives of patients with AN on nasogastric feeding found that 66% of them initially regretted the treatment but, in retrospect, agreed that it was necessary.[8] It is hard to imagine that tube feeding a patient against their will and keeping them hospitalized for months will solve their fundamental issues without a baseline desire to heal and specialized therapy. This highlights the potential value of specialized inpatient treatment centers for eating disorders. This option is limited by availability. In our patient's case, there were no appropriate treatment centers in the state. Legal considerations precluded the possibility of sending her to a treatment center across state borders.

If the ethics of this situation were not already complicated enough, the straightforward framework of assessing decision-making capacity that tends to be helpful in these situations may not be fully applicable to patients experiencing AN. Capacity is defined as the "functional determination of whether an individual patient has the ability to make a specific decision," and, in medical contexts, is determined by healthcare providers.[9] Capacity is specific to each decision and can change with context. A related and often conflated concept is competency, which is a legal determination made by a judge and is a more global assessment of a person's fitness to participate in legal matters. For a patient to have medical decision-making capacity, they must demonstrate:

a. understanding of the situation,
b. appreciation of the consequences of their decision,
c. reasoning in their thought process, *and*
d. the ability to communicate their wishes.[10]

A lack of capacity as indicated by the absence of any of these four features gives a provider a legal and ethical basis to restrict a patient's autonomy. In the patient from our case, determining her capacity with confidence was difficult, as she was

unwilling to participate in conversations that might demonstrate her understanding, appreciation, and reasoning. However, this refusal to cooperate and her denial of disordered eating habits seemed to suggest that at least one of these features was diminished. With this lack of clarity, it is understandable that different providers involved in her care had different opinions about her decision-making capacity.

The argument could be made that the nature of AN is inherently at odds with having the capacity to decide against receiving treatment for the illness, especially in severe cases. The delusional body image and pathologically distorted priorities necessary to reach a BMI of < 15 call into question a patient's ability to truly appreciate their illness and the consequences of refusing treatment. Even if they seem to demonstrate a fair understanding, the decision itself to refuse food in the face of death might be so emotionally driven and irrational that it precludes the idea that the patient displays sufficient reasoning in their thought process. Some studies have explored the neurologic pathology in these patients, finding objectively diminished performance on decision-making tests and impairment of the ventromedial prefrontal cortex, which may further favor the school of thought that these patients are victims to their illness rather than rational patients that can appropriately weigh the consequences.[11,12]

Though these considerations are always important in the care of these patients, the ethical and legal dilemmas may become more simple or complicated, depending on the laws in a specific jurisdiction and whether a patient is an adult or a minor. The discussion of this topic could continue indefinitely without ever reaching satisfactory conclusions about how to best approach these cases. As such, there should be a low threshold to engage family members, consult bioethics teams, and involve the legal system when it comes to deciding how to care for these patients. Failure to do so may result in unclear goals of care and rather unproductive hospitalizations, as with our patient.

REFLECTING ON THIS CASE

Our case highlights the ethical and practical difficulties in treating these patients; the dilemma of compulsory treatment can be persistent and continually interfere with all other aspects of care. In hindsight, there was an inconsistent approach to this patient's decision-making capacity and treatment goals. This was clear early on, as she had several admissions in prior months, but not until this admission was her BMI so aggressively addressed. Furthermore, although her dangerously low weight was the primary reason for this prolonged admission, she continued to lose weight for 17 days. Determination of the patient's decision-making capacity varied between different hospitalists and the psychiatry team, understandably

resulting in confusion about how strongly to incorporate the patient's opinions on her treatment and feeding.

The two most logically consistent approaches to her care would have pivoted on whether she was allowed the right to refuse treatment or not. If she was decisional, then she could have left against medical advice early on in her stay, or, if she was willing to stay, she would have had full involvement in her treatment plan and medical information (daily weights, tube feed rates, etc.). In contrast, if she did not have the capacity to refuse treatment and feeding, then it would have been medically ideal to have her NG tube placed early on in the admission in order to facilitate weight gain as quickly and safely as possible without any regard for her disinterest in this approach, and she would have been discharged to a behavioral health facility when medically stable.

In reality, the approach to her treatment was a rather arbitrary mixture of these two extremes. The reasons for this are varied. First, and perhaps most difficult to appreciate at first glance, is the goal to maintain the therapeutic alliance. As an obsession with maintaining control is often central to the pathology of AN, it could have been damaging to completely disregard her concerns and wishes, even if there was a legal basis for doing so. It would have been possible to have her placed on a mental health hold and had her deemed legally incompetent, requiring the appointment of a surrogate decision maker. Long-term, however, this disease cannot be defeated without her own willingness to cooperate with treatment and desire to heal. Similarly, tube feeding her and forcing rapid weight gain may have unintended consequences with her already deranged body image and relationship with food.

Second is the poor clarity surrounding her decision-making capacity and how it relates to her treatment plan. Parts of this could have been improved with better communication between providers, but the ethical haziness of the situation and the delicate nature of the patient relationship were the core of any confusion here.

Finally, the patient's obstinance and poor insight complicated every decision. Without totally disregarding her autonomy, it was increasingly difficult to accomplish what was needed. She continued to have a prominent influence on the rate of her tube feeds and her disposition, and as such, her BMI peaked at only 14.8, and it took almost two months to achieve this.

One last consideration of this patient's management is that forced hospitalization and tube feeding might have been entirely futile for her long-term outcome. Our patient was yet to receive the appropriate intensive therapy that might help her gain the insight to tackle her illness, but unfortunately, there was no practical route to offer this during her hospitalization. As discussed before, there were no inpatient eating disorder facilities available in the state. As such, despite a 54-day hospitalization, she gained minimal insight into her condition,

continuing to deny disordered eating habits until her discharge.

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