CASE REPORT

Integrative Therapies for Diverticulitis Related to Alcohol Abuse: A Case Report

Jasmine B. Hollywood, DCN-c, LDN, CNS, BA-Psy, CRPS, ORDM

Abstract

Background: Alcohol use is prevalent and may be a risk factor for diverticulitis. Therapeutic interventions that support the elimination of addictive behaviors and reduce disease progression include diet, supplement, and psychosocial interventions.

Case Presentation: This case report highlights a client with successful treatment of abscess, bowel blockage, and inflammation in a 54-yr-old Caucasian male using medical nutrition therapy while continuing conventional treatment as prescribed by his medical provider. Over the course of 85 days, his treatment was augmented with a high-phytonutrient, high-fiber, Mediterranean style diet. Alcohol was eliminated, caloric intake was increased, while emotional support, physical activity, and a multivitamin were added. Upon final follow-up, the client had a remarkable reduction in symptoms and addictive behaviors.

Conclusion: Diet, supplement, and psychosocial interventions may be useful in the management of inebriate patients with diverticulitis. Population-based clinical studies should be done to understand the role of these therapies.

Jasmine B. Hollywood, DCN-c, LDN, CNS, BA-Psy, CRPS, ORDM; Student in the Doctoral of Clinical Nutrition Program, Department of Nutrition and Herbal Medicine, Maryland University of Integrative Health, Laurel, Maryland.

Corresponding author: Jasmine B. Hollywood, DCN-c, LDN, CNS, BA-Psy, CRPS, ORDM
E-mail address: jhollywood@muih.edu

Introduction

Diverticulitis is a condition in which sac-like protrusions develop along the gastrointestinal tract at its weakest points as a result of perforation.[1] It may be accompanied by abscess formation, bowel obstruction, and segmental colitis.[2] Risk factors include age and diet.[3-5] A common diet association increasing risk by three-fold is alcohol abuse.[3,5,6] Individuals presenting in a nutrition practice with diverticulitis should be evaluated for excessive alcohol consumption. This case reports a 54-year-old man who has a long-term history of alcohol abuse with a diagnosis of acute diverticulitis.

Patient Case

A 54-yr-old Caucasian male presented at the local hospital and reported severe abdominal pain, abdominal bloating, frequent episodes of diarrhea, nausea, and vomiting. The physician diagnosed the patient with acute diverticulitis associated with abscess, partial small bowel obstruction, and acute colitis. After release, he sought medical nutrition therapy, during which he reported long-term alcohol abuse, recent weight gain, and frequent isolation.

History

During the initial evaluation, the client reported he began alcohol use during his late-adolescent years while experiencing in-home domestic abuse related to his parents' recent divorce. He entered the military at age seventeen and his alcohol use increased. After separation from the military, alcohol usage continued to increase during a 17-year marriage and subsequent divorce. Now 54, he reported having consumed 32 alcoholic beverages over 2-3 hours, 4-5 d/wk. He also reported a medical history of gout, bursitis, degenerative joint disease of hand, osteoarthritis, esophageal stricture, and gastroenteritis.

Clinical Findings

Evaluation concluded overweight status (*ht* = 73 in, *wt* = 215lbs, *BMI* = 28.4, and *waistline* = 44). Correspondent with physician documentation, the client's abdominal area appeared distended. In addition, his facial skin was slightly pallor and he appeared fatigued. The client also presented with poor oral health (i.e. bad breath, bleeding gums, and yellow-brown teeth). During consultation, the client made several restroom visits and claimed frequency due to bouts of diarrhea. Recent hospitalization laboratory documentation revealed abnormal blood work. Dietary

analysis showed 47% of calories from alcohol and 1365 calories from macronutrients, which is half of the clients required caloric intake for maintaining BMR. Clinical findings identified the major cause for disease manifestation to be the excessive intake of alcohol leading to changes in gastrointestinal functioning (i.e. NI-4.3.4 and NC-1.4). Based on nutrition diagnosis, the client was placed on a Mediterranean diet, multivitamin, and subsequent recommendations listed in Figure 4.

Timeline

Figure 1 demonstrates how the client's adverse events lead to abuse of alcohol contributing to his current day's negative health outcomes and how nutrition intervention helped manage diverticulitis symptoms (i.e. resolving abscess, bowel blockage, and inflammation). Figure 2 outlines clinical data and findings, figure 3 reports client meals, and figure 4 documents intervention.

Figure 1. Timeline

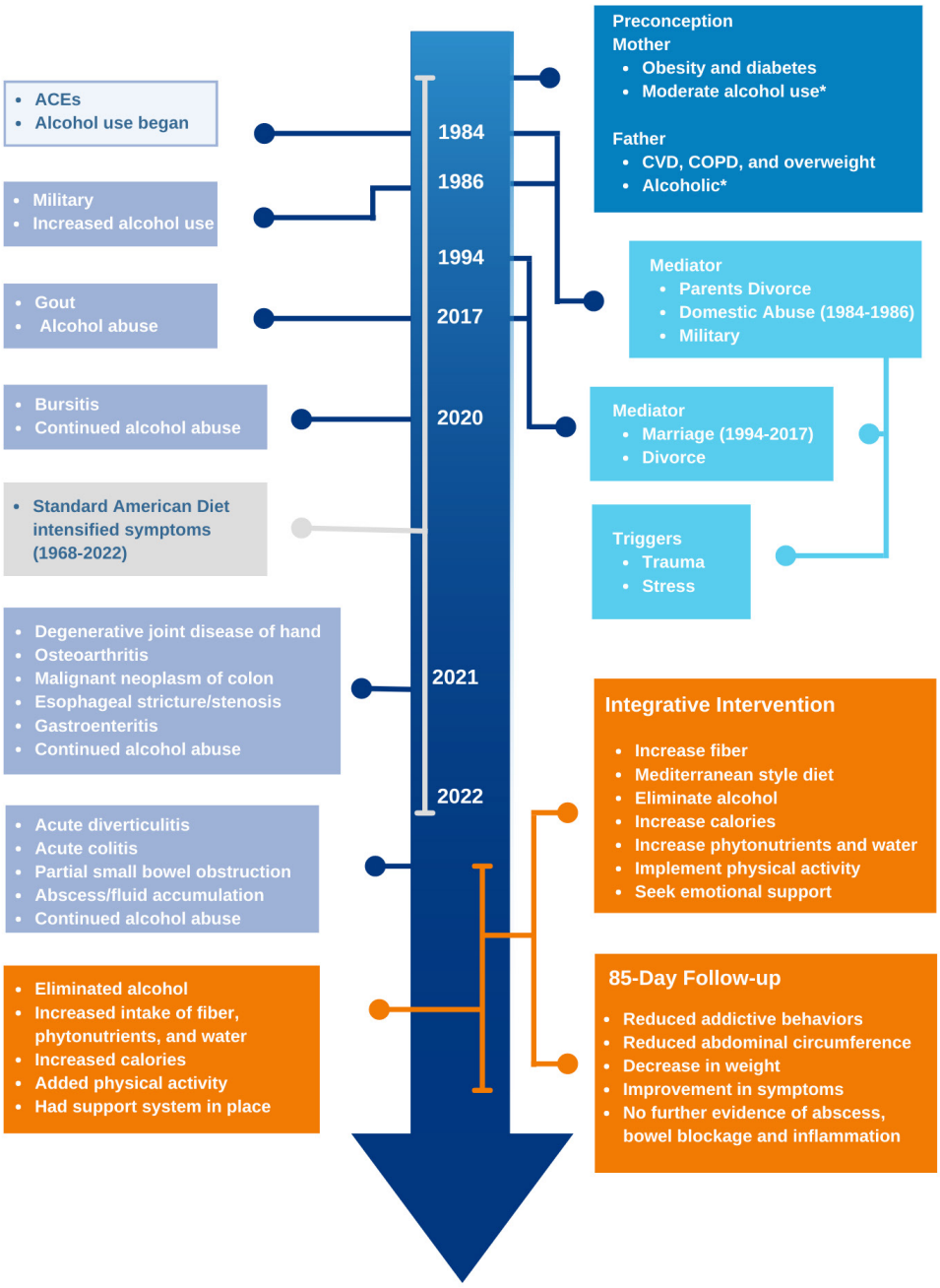


Figure 2. Clinical Visits and Laboratory Data

Clinical Visits

Visit Dates		Dietary Data		Anthropometrics	
PCP	MNT	Food kcals	ETOH kcals	Wt (lbs)	Waistline (in)
B: 7/6/22	---	---	---	213.8	---
---	B: 7/16/22	1,365 kcals	1,221 kcals	215.0	44
---	F: 7/23/22	---	---	214.9	---
---	F: 7/30/22	---	---	211.3	---
---	F: 8/13/22	1,747 kcals	0 kcals	209.0	---
F: 8/19/22	---	---	---	205.2	---
F: 8/20/22	---	---	---	208.9	---
---	F: 9/3/22	1,837 kcals	0 kcals	206.0	42
F: 9/21/22	---	---	---	204.1	---
---	F: 9/24/22	2,650 kcals	0 kcals	202.0	40
---	F: 10/14/2022	2,535 kcals	0 kcals	202.0	40

Laboratory Data

Marker	Normal	@ Day 1	Result	@ Day 85	Result
		7/62022-7/11/2022		9/24/2022	
Albumin	3.5-5.0 g/dL	3.4 g/dL	L	4.3 g/dL	N
Protein	6.4-8.2 g/dL	6.3 g/dL	L	7.1 g/dL	N
BUN/Creat	7-34	4-6	L	N/D	N
BUN	6-26 mg/dL	3-4 mg/dL	L	8 mg/dL	N
Glucose	70-99 mg/dL	103-126 mg/dL	H	84 mg/dL	N
K+	3.5-5.1 mmol/L	3.3-3.4 mmol/L	L	4.5 mmol/L	N
CO2	21-32 mmol/L	18	L	30	N
Mono Abs	---	1.1%	H	---	---
Mono	---	10.3%	H	6.7%	N
Lymphs	24-44%	13.5-18.7%	L	30.5%	N
MCH	26-32 pg	32.3-33.3 pg	H	30 pg	N
HCT	40-54%	38-39.8%	L	44.5%	N
Hgb	14-18 g/dL	12.5-13.6 g/dL	L	14.9 g/dL	N

Acronyms: PCP, physician visits / physician; MNT, nutrition visits; CO2, carbon dioxide; Mono, monocytes; MCH, mean corpuscular hemoglobin; Hgb, hemoglobin; HCT, hematocrit; K+, potassium; L, low; H, high; N, normal; kcals, calories; ETOH, alcohol; Abs, antibodies; GI, gastrointestinal

CTScan Ordered by PCP: Documents Submitted by Client

CT Scan with Contrast: 7/06/2022 Prior to Intervention	CT Scan with Contrast: 9/14/2022 Post Intervention
Indication: Bowel Obstruction	**Indication: Diverticulitis**
Non GI Findings: Cardiomegaly. Bibasal volume loss, right slightly greater than left. Splenic cyst 2.1 cm.	**Non GI Findings:** No basilar lung disease. Splenic cyst 2.1 cm.
Findings: Colonic diverticulosis. Wall thickening distal descending colon/proximal sigmoid colon felt to represent mild to moderate acute diverticular colitis. Moderately distended stomach and moderately distended small bowel. Persistent small bowel obstruction transition, left lower quadrant, thickened loops of bowel and mild angulation of the bowel segment. The bowel distal to these loops collapsed. The coronal series reveals peripheral enhancement and edema in the adjacent fat. These likely represent abscesses.	**Findings:** Mild wall thickening of the sigmoid colon a background of mild diverticulosis. No bowel obstruction, ascites, free air, or abscess. Previously seen abscess has resolved; inflammatory stranding around the sigmoid colon has largely resolved with tiny focal residual density along the anterior aspect of the sigmoid remaining, likely sequela of prior inflammation.
Impression: Persistent bowel obstruction, point of transition left lower quadrant. This may be due to thickened small bowel segments and/ or adhesion. Thickened segment of descending colon/proximal sigmoid likely sequela of diverticulitis. There are peripherally enhancing fluid collections in the left lower abdomen/left lower quadrant, largest 5.5 x 5.2 x 6.2 cm. These are felt to represent abscesses. Etiology of abscess uncertain based on this study but given history of diverticulitis, abscess related to perforated diverticulitis is a possibility. The thickened small bowel in left lower quadrant may reflect regional enteritis or inflammatory bowel disease. This could also be the cause of abscess.	**Impression:** Resolved abscess and inflammatory changes in the lower abdomen/pelvis with mild residual wall thickening of the sigmoid colon which could be sequela of prior diverticulitis or segmental colitis. No acute abdominopelvic abnormality.

Figure 3. Client Reported Meals

Baseline Nutritional Assessment- Initial Visit 7/16/2022

Meal	Description	Amount	Item	Calories
Lunch	Coke Italian sub	1 1	20 oz bottle 8-in from 7/Eleven	227.18 420.00
Snack	Vodka Cranberry (4 doubles) Fireball Whiskey	8 8 8	oz oz oz	523.90 111.32 856.00
Dinner	Water Spaghetti and meat sauce Bread roll (Hawaiian)	1 1.5 0.5	cup cup roll	0 397.53 49.90
				2,586.00

4-Week Nutritional Assessment- Third Visit 8/13/2022

Breakfast	Egg Thick cut bacon Rye bread Peanut butter Orange juice 2% milk	1 1 1 2 6 6	large slice slice tbsp oz oz	77.50 60.00 68.16 192.85 83.70 85.05
Lunch	Ham & Swiss sandwich Apple juice	1 6	each oz bottle	300.63 85.56
Snack	Water Nabisco Ritz crackers G2 Gatorade (small)	1 6 1	cup each bottle	0 98.20 40.00
Dinner	Chicken thigh-baked Rice Mixed greens Thousand Island dressing Mixed vegetables Water	4.5 0.5 2 1 1 1	oz cup cup oz cup cup	304.90 102.70 11.37 117.15 118.30 0
				1,747.00

7-Week Nutritional Assessment- Fourth Visit 9/03/22

Breakfast	Kellogg's Corn Flakes 2% milk Orange juice	2 2 1	cup cup cup	199.88 244.00 122.01
Snack	Water Simply lemonade Dark Chocolate Bar Vanilla ice cream	1 16 1 1	cup oz each oz	0 239.78 193.24 588.68
Dinner	Chicken parmigiana Spaghetti and meat sauce Water	5 2 1	oz cup cup	250.43 530.04 0
				1,838.00

Acronyms: PRO, protein; CHO, carbohydrate; FAT, fat; kcals, calories; ETOH, alcohol; oz, ounce; tbsp, tablespoon; in, inch

10-Week Nutritional Assessment- Fourth Visit 9/24/22

Meal	Description	Amount	Item	Calories
Breakfast	Chicken parmesan sub w/ sauce Fries Gatorade Water	1 4 12 1	each oz oz cup	632.00 178.15 84.18 0
Lunch	Shrimp taco with lettuce, tomatoes, onions, cheese Water	2	each	460.00 0
Snack	Skittles Lays chips IBC Black Cherry soda	1 1 12	packet oz bag oz bottle	236.39 153.43 170.00
Dinner	1/2 rack BBQ ribs Banquet mac n cheese shells Lemon water	4 6 16	ribs oz oz	555.80 10.26 0
				2,650

13-Week Nutritional Assessment- Fifth Visit 10/14/22

Breakfast	Turkey and pork sausage Banana Chobani Greek yogurt, strawberry Thomas blueberry bagel Cream cheese spread Water	1 0.5 1 1 2 0	patty large container bagel tbsp cup	76.75 60.52 110.00 280.00 101.50 0
Lunch	Submarine or Hoagie Roll Turkey breast Swiss cheese Classic ranch dressing Water Tuna, canned Mayonnaise Green peas, canned	1 4 1 2 1 0.5 2 2	8 in oz oz tbsp cup 5 oz can oz oz	295.74 166.70 111.41 106.23 0 74.82 365.14 38.56
Snack	Hard pretzels sticks Water	2 1	cup cup	307.25 0
Dinner	Chef Boyardee, ravioli, beef, canned Water	2 1	cup cup	440.00 0
				2,535.00

Macronutrient Analysis

DATE	TOTAL KCALS		ETOH KCALS		PRO KCALS		CHO KCALS		FAT KCALS	
7/16/22	2,586.00	100%	1,221.00	47%	153.00	6%	993.00	38%	219.00	9%
8/13/22	1,747.00	100%	0	0%	369.00	21%	727.00	42%	650.00	37%
9/03/22	1,838.00	100%	0	0%	278.00	15%	1,150.00	63%	410.00	22%
9/24/22	2,650.00	100%	0	0%	454.00	17%	1,199.00	45%	997.00	38%
10/14/22	2,535.00	100%	0	0%	502.00	20%	1,130.00	45%	902.00	36%

Figure 4. Integrative Intervention

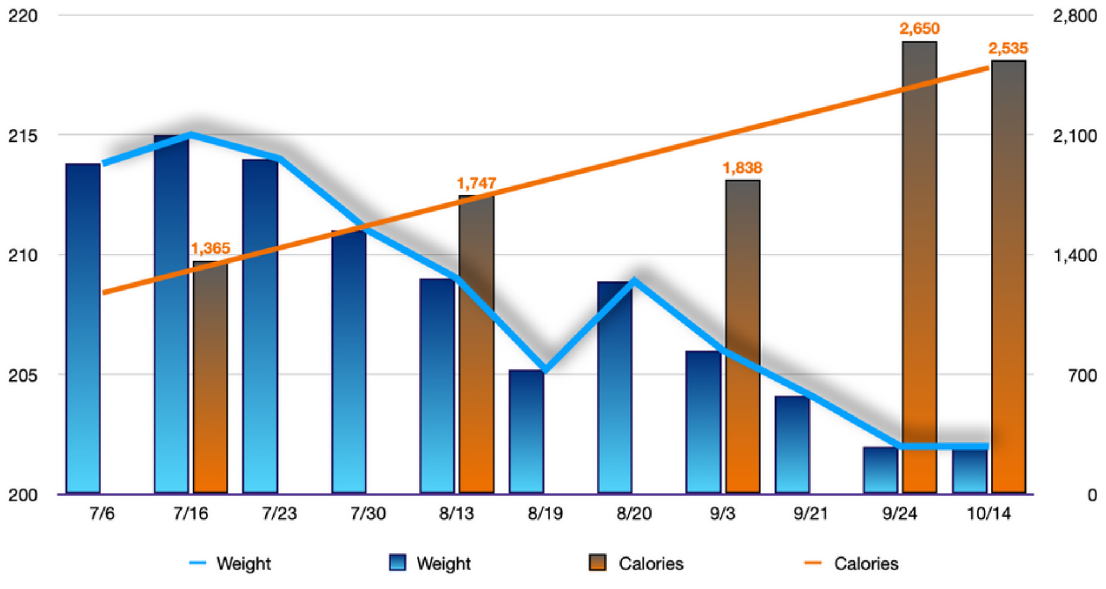
Recommendation	Number of Times Intervention was Delivered						
	7/16/2022	7/23/2022	7/30/2022	8/13/2022	9/3/2022	9/24/2022	10/14/2022
Eliminate Alcohol	✓	✓	✓	✓	✓	✓	
Increase fiber		✓					
Mediterranean style diet	✓						
Increase calories to 2,400 kcals	✓		✓	✓	✓		
Increase phytonutrients	✓	✓	✓	✓			
Increase water	✓						
Implement Exercise	✓						
Seek emotional support	✓	✓	✓	✓	✓		
Compliance		✓					
Intervention Re- Recommended		✓				✓	✓

What is a Mediterranean diet?

A **Mediterranean diet** is a dietary method easy to adopt. It focuses on reduction of ultra-processed foods, increased intake of nutritious food choices, and reduction of saturated fat while increasing intake of healthy polyunsaturated and monounsaturated fatty acids.

- Individuals that adopt a Mediterranean diet eat olive oil, fruits, vegetables, breads, cereals, legumes, and nuts in every meal.
- Individuals may also consume eggs, poultry, and dairy foods daily.
- Fish and seafood should be consumed less often, but at least two times per week to avoid high intakes of mercury and other bacteria from the sea.
- Red meat and sweets should be consumed less than 2 times per week.
- Furthermore, alcohol is included, but limited to red wine and should be consumed in moderation according to the recommended daily intake assigned to gender.

Caloric Intake and Weight Correlation



At the initial visit the client reported several gastrointestinal symptoms and dietary behaviors that pointed to altered gastrointestinal functioning. Along with assessment of physician provided diagnostic and endoscopy paperwork, and evaluation of dietary behaviors, the chosen dietary intervention was a general Mediterranean diet. Since the client disclosed overconsumption of alcohol and underconsumption of caloric intake, this diet was best suited for assurance of increase in fiber, phytonutrients, and calories, as well as easy compliance.

Follow-up and Outcomes

Follow-up began after week one and continued for eighty-five days. At the first follow-up visit on July 23rd, 2022, the client reported non-compliance to physician recommendations and nutrition interventions but remained abstinent from alcohol. Follow-ups were transitioned to every other week, then every three weeks. He continued to eat a Mediterranean style diet, abstain from alcohol, and was counseled on dietary and integrative interventions at every visit. By final follow-up, caloric intake increased remarkably and there were noticeable differences in weight (*wt* = 202 lbs) and abdominal circumference (*waistline* = 40 in). He further reported a decrease in abdominal pain and reduced episodes of diarrhea.

Patient Perspective

My experience using nutrition was at thee unknown to me, but I chose a different path of wellness, which was abstinence and a preselected change in my personal diet. The decision not to drink for 90 days in my opinion is something that is elf served, sometime by a doctor, sometimes by a personal medical episode or the best situation is personal fortunate! I was very pleased with the nutrition results. But keep in mind like life, these results are not overnight and can be dissatisfied at times, but longevity and persistence is key. Medical evaluation is up to the individual with the personal experiences. It has truly given me insight if non-medication avenues. I would highly recommend that there are other options than traditional medicine and gladly relay my personal experience to others in hope that they may try something else than the normalcies we hear and read.

DISCUSSION

This case report offers a different perspective for diverticulitis related to alcohol consumption and discussion of important aspects of nutrition related to disease. Fundamentally, caloric insufficiency is common in individuals who abuse alcohol, as they normally receive 30-50% of their daily calories from alcohol.[7] As alcohol usage increases, intake of calories from macronutrients continues to decrease. The client was recommended to eliminate alcohol and increase caloric intake. Figure 4 documents as the client's consumption of calories improved, his weight decreased, showing a mutual relationship related to disease recovery.

Diet plays a significant role in the development of diverticulitis. Exposure to high intakes of toxic metabolites can lead to reactive oxygen species (ROS) and increased luminal pressure.[1,6] Continuous inflammation from repeated abuse of alcohol may directly damage transepithelial cellular mechanisms (i.e. weakening of cell membranes, inducing paracellular permeability, and initiating erosion to the diverticula wall).[2,6] The Gastroenterology Association and American Society of Colon and Rectal Surgeons recommend a diet high in fiber inflated with phytonutrients and water for the reduction of recurrent episodes of acute diverticulitis.[1,2] Fruits and vegetables reduce toxic alcohol metabolites. Phenolic compounds and water in these constituents possess hydroxyl molecules required to donate free electrons to radical molecules caused by ROS.[8] The client was prescribed a high-fiber, high phytonutrient diet, with increased water. These elements may have contributed to resolution of abscess, blockage of bowels, and inflammation.

Research describes a positive correlation between history of trauma and alcohol dependence. Alcohol consumption and exposure to trauma have been linked to arthritic, gastrointestinal, and HPA-axis complications.[9] Due to the stimulation of several neuroendocrine responses in the HPA axis during alcohol exposure, recovery procedures usually include self-help groups and psychotherapy that encompass emotional support.[9] Emotional support is essential for reduction of relapse, addiction recovery, and motivation to change dietary behaviors. Furthermore, the nutritional therapies that detoxify ROS also help regulate HPA-axis responses.[8,9] The client disclosed his cycle of alcohol abuse was related to trauma and reported manifestation of arthritic and gastrointestinal diseases. The lifestyle recommendation for this client was to seek emotional support, which may have also contributed to reduction of addiction behaviors.

In addition, client compliance plays a significant role in the success of the current intervention. The ability to adhere to the practitioners' recommendations is not always easy and can determine intervention efficacy. Furthermore, not all successful therapies are suitable for entire populations, as there is no singular diet or integrative intervention that works the same for everyone. Nonetheless, going from heavy alcohol abuse to complete abstinence overnight is truly remarkable and to mentally have the power to make a sporadic change like this can strengthen the client's compliance, resulting in achievable positive outcomes.

Ethics Approval and Consent to Participate

IRB approval is not required for case reports. Signed informed consent is on file with the author.

Consent for Publication

Signed informed consent for publication is on file with the author.

Availability of Data Materials

Data, materials, and physician documentation are available upon request.

Conflict of Interest

The author declares a personal relationship. Client is a family member. The client was counseled prior to treatment on understanding boundaries of the patient-practitioner relationship and agreed to practice rules.

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