

THE EFFECT OF MULTIPLE PERSONALITY DISORDER ON ANESTHESIA: A CASE REPORT

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ABSTRACT

In the context of studies on the psychophysiological differences between alter personalities in patients with multiple personality disorder (MPD), a patient with diminished need for anesthetics, especially analgesics, during major surgery is described. Psychophysiological study of MPD patients during anesthesia is recommended, as the relation between doses of medication and their effects can be directly assessed.

INTRODUCTION

A growing body of literature indicates the existence of psychophysiological differences between alter personalities in patients with multiple personality disorder (MPD). Different allergic reactions, gastrointestinal and optical differences, changes in voice and handedness, effects on pain control and differences in response to medication, among other things, have been well documented (Alvaredo, 1989; Barkin, Braun & Kluft, 1986; Braun, 1983; Kluft, 1987; Miller, 1989; Miller & Triggiano, 1992; Putnam, 1984, 1989). In this case report, we will describe a diminished need for anesthetics by an MPD patient undergoing major surgery. This finding may be related to alter-specific psychophysiological functioning.

Of clinicians surveyed by an NIMH study, 46% reported observing differential medication sensitivities across alter personalities (Putnam, 1986a). Anecdotal reports describe different responses and sensitivities to medication or allergens (Braun, 1983; Miller & Triggiano, 1992). However, these different sensitivities have not been reported beyond the

level of clinical observations. Because of methodological and ethical difficulties in the design and implementation of appropriate experiments (Putnam, 1986b), the field is characterized by a paucity of well-controlled studies. The lack of documentation of clinical cases is due to the fact that the dose-effect relationship, especially in MPD patients, is very hard to assess. Dose, effect, and also compliance at times appear to be inter-related with the organization and function of the personality system and therefore can be variable (Barkin, Braun, & Kluft, 1986).

The advantage of studying MPD patients undergoing intravenous chemical anesthesia during major surgery is that the administration of medications is delivered in a manner that is under the direct control of the anesthesiologist. By administering the anesthetics intravenously, the relation between dose and effect in MPD patients can be directly assessed without having to take the factor of compliance into account. Furthermore, the effect is measurable according to objective standards. The anesthesiologist intends to bring about pain control, hypnosis and muscle relaxation in order to make the patient unaware of discomfort and suppress the sympathetic stress response to the surgical procedures while physiological parameters are kept at an optimal level. Given a normal venous pressure, the sympathetic stress response to (painful) stimuli during the operation is correlated with the depth of the anesthesia. This means that a rise in arterial blood pressure necessitates an increased dosage of analgesics, while a stable pressure indicates that the anesthesia is adequate.

CASE REPORT

Ms. A., who was 51 years of age in 1991, underwent surgery three times for bladder and bowel problems between 1989 and 1991. She had a history of several psychiatric hospitalizations, during which she was diagnosed as having a conversion disorder, schizophrenia and schizoid personality disorder. At the age of 46, she was diagnosed as having multiple personality disorder (MPD), for which outpatient treatment was started. At the age of 31, she suffered a traumatic lesion of the spinal cord at the upper lumbar level (L1-L2) as the result of a suicide attempt. Due to the resulting paraplegia, she became dependent on a wheelchair. Neurological examination revealed that she had a spastic paresis of the lower extremities with anesthesia. The region of the medial femoral cutaneous nerve (L3) was hyperesthetic. Her reflexes were normal except for the ankle reflexes, which could not be

elicited, and the plantar reflexes which were unresponsive. The spinal lesion also resulted in chronic micturition problems due to a neurogenic bladder, and obstipation. She was hospitalized three times in the period 1989 to 1991 for the surgical treatment of these bladder and bowel complications. For years she used a daily dose of diazepam 10 mg. and cyclo-barbital calcium 200mg., at bedtime for insomnia. Liver and kidney functions were all within normal ranges.

Surgery was performed under general anesthesia. The medication dosages are indicated in Table 1. As hypnotics, propofol (Diprivan) or isoflurane (Forene) was used. Alfentanil (Rapifen) was administered as analgesic. A sufficient depth of anesthesia was reached with this combination to avoid unwanted stress responses. Vecuronium (Norcuron) was given as non-depolarizing muscle relaxant. During each operation the patient's blood pressure was low-normal to decreased, indicating a somewhat strong degree of analgesia. There was no use of hypnotic interventions pre-opera-

tively. The patient stated that before and after the operation her adult alters were in control, and that she distanced herself from the fear for the surgical procedures by putting a child alter in charge. Back on the ward the patient reported: "It is not me but the child who underwent the operation."

The patient's subjective account is especially intriguing because her need for anesthetic medication was rather atypical. Table 1 shows that the patient received the normal amount of muscle relaxants during each operation. However, the dose of analgesics was quite divergent from the norm: She needed only 16 - 33% of the amount normally used in comparable non - MPD patients. The doses of hypnotics were somewhat lower than normal, 50 - 80% of the usual dosage during surgical procedures.

TABLE 1
Dosages of Anaesthetic Drugs Administered

	Muscle relaxant	Analgetics	Hypnotics
	Vecuronium (Norcuron)	Alfentanil (Rapifen)	propofol (Deprivan) or isoflurane (Forene)
Normal dosage ranges (Miller, 1990)	0.03-0.06 mg/kg/h	0.7-1.2 µg/kg/min	6-9 mg/kg/h propofol 0.8-1.0% isoflurane
First operation dosages: continent urostoma (operation time: 7 hours)	0.03-0.06 mg/kg/h	0.24 µg/kg/min	4 mg/kg/h propofol
Second operation dosages: revision urostoma (operation time: 3 hours)	.03-0.06 mg/kg/h	0.12 µg/kg/min	6 mg/kg/h propofol
Third operation dosages: anus prenaturalis (operation time: 3 hours)	0.03-0.06 mg/kg/h	0.12 µg/kg/min	0.6% isoflurane

*All doses are given in milligrams per kilogram (mg/kg) of bodyweight (bw). They are administered over time, expressed as mg/kg 1 hour (mg/kg/h). Over the age of six years requirements of anesthetic drugs for children expressed in mg/kg BW are in the same range as those for adults.

DISCUSSION

In general, a paraplegia after total or partial traumatic transections of the spinal cord does not abolish the need to suppress the sympathetic nervous system during surgery. In the case under discussion, the major part of the efferent innervation of the surgical area was conducted through spinal cord segments higher than L1 and L2, suggesting the need for a normal level of analgesic medication (Katz, Benumof, & Kadis, 1981). Furthermore, an increased need of analgesics would have been expected in this case because the patient had used benzodiazepines and barbiturates for many years. Because of enzyme-induction in response to the use of such medications, it could have been anticipated that this history of medication use would have led to the increased metabolism of these drugs, and therefore to increased medication requirements.

The patient under discussion here had suggested that a child alter was in control while she was being prepared for each of the respective operations. This may have been correlated with or caused the decreased need for anesthetics. This phenomenon has much in common with unpublished clinical observations by many clinicians in several nations that some MPD patients need lower doses of sedatives when a child alter is in control (Suzette Boon, personal communication, 1992).

An interesting observation was that Ms. A's need for post-operative analgesia was much higher than in patients without MPD in similar situations, in significant contrast to her diminished need for anesthesia during the operations. This is consistent with, but does not prove, that different alters were in charge during the operation and the post-operative period.

The change of alters here seems to be triggered by the patient's intense anxiety about the operations, which she perceived as threats. This sequence of dissociative phenomena being triggered by intense affect is also described in a discussion of the partus stress reaction, in which extreme panic during delivery is followed by dissociation (Moleman, van der Hart, & van der Kolk, 1992). Modern research studies confirm this relationship between traumatic stress and immediate dissociative reactions (Holen, 1993; Koopman, Classen & Spiegel, 1994; Marmar, et al., 1994) and these findings seem consistent with recent attempts to integrate network models of memory with insights from research on dissociation and MPD (Yates & Nasby, 1993; Li & Spiegel, 1992). These models propose that negative affect might influence the inhibitory quality of links between items of memory which would parallel the process of dissociation.

In our clinical example the patient described her switching process in terms of distancing herself from the fear by putting a child alter in charge. In terms of neural network theory, it might be described as the connection of nodes – i.e., a group of structural elements of a memory network that prevent the fear response from entering or staying in consciousness via inhibitory linkages (Yates & Nasby, 1993). Meanwhile, an excitatory stimulation might have activated a group of nodes, together constituting the neural network

of this child alter, to reach consciousness (Yates & Nasby, 1993).

This case report seems to suggest that patients with MPD may have different reactions to anesthetics as compared with non-MPD patients. If, as this case suggests, the reaction to the anesthesia is different among alters, it is important to monitor the physiological parameters carefully during the operation and during the post-operative period: A switch between alters might necessitate a totally different dosage of the drugs. As the administration of anesthetics before and during major surgery constitutes a well-controlled situation, with 100% compliance, we recommend that differential need for anesthetics will be more systematically studied in future psychophysiological research on MPD. ■

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