

POINT OF VIEW

More on sedation in digestive endoscopy

L. M. Benito de Benito and R. Aguado Romo¹

Section of Digestive Diseases. Service of Internal Medicine. Hospital Nuestra Señora del Prado. ¹External Clinical Psychologist. Talavera de la Reina, Toledo. Spain

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Since the times of James Esdaile (1808-1859), an English surgeon who worked in India during the preanesthetic era, numerous studies have reported the successful use of hypnoanesthesia for major surgical procedures. Nevertheless, the use of this technique is virtually nonexistent at present since the efficiency of chemoanesthesia is unquestionable. The practice of routine digestive endoscopy is usually not as aggressive as a surgical procedure, nor needs the same degree of anesthetic depth. However, during this kind of exploration changes in heart rate, arterial blood pressure, and other recordings suggest that, paradoxically, while the patient may be feeling no pain, the body does react like it is being attacked.

Echoes of a controversy emerged four years ago (1) as a result of an editorial (2) that questioned who should be responsible for sedation in digestive endoscopy still persist.

Not in the slightest form aims this article at reopening old wounds. On the contrary, it may help heal them better. The debate had –and still has– such a big impact that it eventually led to different fora to approach this topic in specialty meetings. With experience over time, it has been verified that patient tolerance of endoscopy without sedation is quite variable; at the same time, however, it

must be admitted that a *naïve* patient's behavior is unpredictable.

A few studies have been done in order to predict tolerance to colonoscopy, an exploration that is usually more painful than gastroscopy. In two of them, carried out by Korean teams and published in 2007, conclusions were very similar. The poorest tolerance was found for women with lower body mass indices and previous gynecological surgeries.

However, while one of those studies foresees that poorest tolerance will affect young women (3), the other one concludes that it is elderly women who will suffer from it (4). Although these two studies are consistent with present experience, probability does not mean determination, and there are always surprises that challenge foresight.

Definitely, there is no useful method to predict tolerance in patients undergoing digestive endoscopy, particularly for first-time procedures.

Typically, the worst tolerated symptom in upper endoscopy is nausea, sickness, and “dry” vomiting (in elective procedures the stomach is empty). In lower endoscopy the most disagreeable sensation is colic pain due to bowel expansion when air is blown in, and to traction on the mesentery, especially the mesosigma. Therefore, discomfort is rather different in both explorations, as is the perceived severity thereof.

In an attempt to make endoscopy more bearable and humane, we resorted to pharmacological anesthesia, as with other discomfort-inducing diagnostic and therapeutic procedures. There is still an unsettled subject – we do not know beforehand which patient is going to really need it. If sedation is offered to patients before the procedure, a large number of them will opt for this possibility. It is also true that some of them, probably a great number, would tolerate the test well enough without anesthesia. However, some of these patients who thought that they could endure the procedure with no anesthesia will even-

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Correspondence: L. M. Benito de Benito. Sección de Enfermedades Digestivas. Hospital Nuestra Señora del Prado. Avda. de Madrid, km 114. 45600 Talavera de la Reina. Toledo, Spain. e-mail: rebenitos@hotmail.com

tually regret not having asked for it. That is why, when using anesthetic sedation in patients undergoing digestive endoscopy, we run the risk of sedating someone who will not need sedation, or of failing to sedate the one who really needs it.

On appraising whether a finished gastrointestinal endoscopy should have been done with or without sedation there is also great controversy.

In general, physicians tend to foresee a better tolerance to the procedure than patients. Moreover, the *ego* makes the physician consider him- or herself more skilful and experienced when colonoscopies carried out without anesthesia are higher in number. Moreover, some of them believe that performing all colonoscopies systematically with sedation leads to losing the ability of negotiating sharp bowel bends. Others think that the percentage of perforations during colonoscopy is higher for explorations performed with sedation, probably because harm awareness is lower because of analgesia, but no clinical trials support this.

The paper by Herrerías et al. (5) is interesting in this respect. The authors collect the results of an extensive 90-item survey on the equipment and habits of digestive endoscopy units in different Spanish public hospitals. Information is collected also on what the authors believed that had to be done.

Responding to item number 60, physicians in one hospital surprisingly considered that no colonoscopy should be done with sedation; in other three hospitals doctors considered that fewer than 33% needed it, three additional hospitals believed that only 33 to 66% of colonoscopies would need sedation, and seven institutions (half of respondents) thought this percentage was over 66%. Authors also conclude that it would be necessary "to increase and improve current settings, especially in the anesthetic area and regarding new material services", and categorize sedation with drugs, with anesthesia, and without any alternative for non-pharmacological sedation.

On inquiring about the composition of endoscopy units, no mention is made of clinical psychologists.

Paraphrasing the aforementioned controversial editorial, the question we suggest is: who must be sedated? "Is it possible to know who needs sedation beforehand?". At present, it seems that the answer to this question is "no". And when the responsibility of making this decision is our own, we often leave it in the patient's hands –let the patient decide.

Obviously, if the patient has already undergone a similar experience (prior endoscopy) his opinion will be very valuable –he or she knows better than anybody else how disagreeable the previous exploration was. However, a patient undergoing endoscopy for the first time becomes usually confused when asked about sedation, and tends to suspiciously turn the question over to the doctor: "What do you think?" "What would you do?", which invites to offer what it is more practical or will help accelerate the

procedure. In this way, if sedation is technically complex, the doctor will be in the habit of saying that it is unnecessary as "it will take just a moment"; if anesthesia is already loaded in a syringe, a similar reasoning is used to suggest the patient should choose sedation as "it will take just a moment" and lack of awareness is better. Bearing in mind the Spanish Patient Autonomy Law 41/2002, unexpected anesthesia use, except when imperiously needed, might bring legal consequences even in the absence of complications.

All informed consent forms for endoscopic procedures include additional information that the procedure may require sedation at doctor's discretion, but patients should be additionally informed on whether sedation will eventually be used. This debate can continue along the faint boundaries between sedation and anesthesia.

In regular clinical practice, when an anesthetic sedation protocol is available, sedation is carried out if no contraindication exists, if the patient agrees to or asks for it, or if the physician considers a sleeping patient will have a better time.

Most of the times the patient does not feel knowledgeable enough to weigh up pros and cons, to decide whether he wants sedation, if it is useful or not; what he wants is no suffering. With the "let them decide" approach, the number of sedated patients will be likely higher than the number of patients who really need it, although this reflection may again be an overestimation of expertise and endoscopic capacity. Some studies make a statement justifying no sedative endoscopy at all (6-8), emphasizing skills and stating that care and know-how would be enough in order to carry out a great number of procedures without too many inconveniences in a high percentage of patients.

Sedation under pharmacological agents is not exempt of complications, about which the patient must be additionally informed. Pharmacological sedation also has risks. That is why, if we sedate an individual who does not need it, probably we are doing poorly since something that is not indicated is contraindicated in medicine. If, according to different works (6-8), the percentage of patients who can tolerate complete colonoscopy without anesthesia ranges from 60 to 85%, sedating every patient as a rule (except for patient rejection) seems wrong resource management. It has been even questioned if sedation really improves efficacy (9) as efficiency is clearly lesser due to its higher cost.

It would be necessary to insist once again, on account of those reflections, that the most important discussion should not revolve around who must be sedated but who needs to be sedated. Even if they were few, there is no doubting that some patients clearly require sedation for digestive endoscopy. And to defend this right we must fight.

A new discussion item can now be raised: what kind of sedation should be used? In a recent Leung's FW review (10), different non-pharmacological methods can be used to make colonoscopies more bearable –from thinner endo-

scopes to relaxation with music or hypnosis. A vast majority of endoscopists –as already mentioned in the work by Herrerías et al. (5)– associate sedation with pharmacological anesthesia. In other words, they do believe there is no other method to obtain sedation but drugs.

Some published articles (11-13) mention environmental music as an effective tool to get a bearable exploration. The mechanism that seems to underlay this method is no other than keeping the mind entertained in something other than the exploration. This way of drawing attention aside from bodily suffering, which is what pharmacological agents described as anesthetics ultimately do, has been tried to get in some other non-pharmacological ways. Different concentration techniques, more or less related to Eastern philosophies, aspire and promote it.

Physician expects the patient to collaborate during the procedure, to stay calmed and relaxed, and to feel minimal discomfort. What the patient wants is no suffering, anxiety or pain. And, should the patient suffer, at least an amnesic effect is welcome, as provided by some anesthetic drugs which are used with great success.

Also clinical hypnosis pursues this effect. What hypnotic anesthesia attempts is make patients bear no suffering, avoiding concerns during the exploration. However, suffering is not only the association of shouting, movements and complaints that happens during the procedure, but also early anxiety, post-procedural trauma, or helplessness and vulnerability feelings before, during, and after the procedure. Recently (14), it has been revealed that one of the main factors predicting the worst evaluation of the whole procedure is related to the time spent by the patient in the waiting room before the exploration. Pain is again more present in women with anxiety, and anxiety increases during the time spent in the waiting room. Regardless of sedation, the time of distress before drugs are administered is a suffering that usually remains overlooked. On the other hand, a clinical psychologist could use this time to initiate an accompaniment phase in order to facilitate patient entry into a hypnotic situation. Therefore, when a patient has to wait before the exploration, this wait will be less distressing if some relaxation technique is put into practice, and a selective process of dissociated focusing (SDF) is the best option.

In a published study with scarcely six patients undergoing colonoscopy under hypnosis (15) Elkins et al. found better results versus the control group. Nevertheless, the Cadranel team (16) was pioneer in 1994 when they suggested that clinical hypnosis could be useful to sedate patients undergoing endoscopic procedures. Apart from those studies, a few have been developed to determine clinical hypnosis utility in endoscopy. In that respect, we are carrying out a prospective, randomized clinical trial in our center to evaluate the tolerance of patients undergoing first-time colonoscopy in three ways: control group (endoscopy without sedation), gold-standard group (endoscopy with pharmacological intra-

venous sedation), and experimental group (endoscopy with clinical hypnotic sedation). The methodology has been approved by our Ethics Committee. Hypnosis is induced by a clinical psychologist. All candidates are monitored during the procedure, with vital signs recorded according to the protocol.

When the procedure was finished, the patient was given a quality questionnaire with an analog scale for pain and perceived overall discomfort. Also a late follow-up visit –between 24 and 48 hours– was done by telephone, because not rarely patients report trouble to eliminate gas, which is considered greater for procedures with sedated patients.

Clinical hypnosis is still surrounded by a haze of pseudoscience. As Jenny Moix (17) says “While in scientific circles no-one has doubts about his efficiency, a majority of people and even healthcare professionals continue to place it within the drawer of paranormal things”. While the neurophysiological mechanisms of clinical hypnosis are well studied, no hypothesis has been yet confirmed in an independent way. It seems there is no relationship with the endorphin system (18,19), nor an influence of acetylcholine (20); therefore, the mechanism is neither hormonal nor a consequence of mental relaxation, often present in the neurotransmitter activation that triggers the parasympathetic portion of the autonomous nervous system (acetylcholine).

It seems to be a much more complex mechanism than accounted for by the action of a single neurotransmitter. Studies by Ciernan, Dane, Phillips and Price (1995) concluded that hypnotic analgesia involves activity suppression in spinal sensorial neurons. Clinical hypnosis has been used and is more often used for diagnostic and therapeutic procedures in which pain and anxiety are present (21-23). There are increasing attempts to rescue this psychological resource from its esoteric halo. Areas in which hypnosis can be useful in the future will be shown through prospective clinical trials (24).

Probably, following the recognition of Clinical Psychology as a health-related activity, more and more hospital doors will be opened for this kind of professionals, whose collaboration can be of great help in the management of pain and anxiety, and its different perspectives. In the last thirty years clinical hypnosis has shown its ability to reduce or eliminate a variety of experimentally induced pains, such as ischemic pain, electrical pain, and thermal pain (25). In the digestive endoscopy area, it may become a tool to outline a better management for some of the previously pointed problems.

Although nowadays the administration of different intravenous drugs is the gold standard of sedation in endoscopy (26), a comparative cost-efficiency study could be a goal to develop. It has been already shown that the administration of analgesic or sedative intravenous medicines can have side effects, though infrequent and generally mild. In addition, in sedated patients vital signs must be monitored, there are costs related to drugs, saline, and

catheters, and indirect costs (sedated patients cannot work or drive the day of the exploration) or social costs (most often patients must be accompanied by someone who also cannot go to work) have to be borne in mind. If all these expenses are taken into account, the cost of sedation raises, especially when bearing in mind that the exploration could have been done without sedation and with minimal discomfort. Do costs and risks justify such discomfort?

Sáenz-López et al. (26) published work in 2006 on the efficiency and safety of propofol as main anesthetic agent, as supervised by the physician performing endoscopy. Midazolam and meperidine could also be used. The study clearly emphasized the safety of these drugs as handled by non-anesthetists, as well as the better tolerance of patients to upper and lower endoscopy. It remains unclear which are the "other methods of endoscopy sedation" they mention to be promoted in future comparative studies *versus* their method. We are considering their method as the gold standard in our study.

Having assumed that tolerance to the exploration is unpredictable, as well as the cost of unnecessary sedation, many endoscopic units just "start with nothing and see what happens". That means the exploration begins and the physician then decides to sedate the patient or otherwise depending on tolerance. In the brief duration of an elective gastroscopy there is almost never time enough to rethink sedation, especially if the patient is already lying on the couch and does not have a venous access. In colonoscopies, sometimes the exploration is stopped and a venous access is taken to administer some kind of sedative or anxiolytic drug that will allow continuing the exploration with better tolerance. Surely nowadays this is maybe the most cost-effective attitude. In advanced endoscopies, endoscopic retrograde cholangiopancreatography (ERCP), endoscopic ultrasounds (EUS), and enteroscopy, sedation should be standard practice since these are explorations are time-consuming.

Psychological sedation methods, based more on psychic abilities, are expected to be less efficient than drug-induced sedation. In contrast with the fact that nobody resists anesthesia (it is a matter of increasing doses in patients with major tolerance), in the case of hypnosis the percentage of patients capable of reaching indifference rendering the endoscopic procedure totally tolerable remains to be seen. It is presumed, first, that in this group the economic cost will be cheaper than with anesthesia. And finally, it would be a question of knowing whether clinical hypnosis can be a routine method for sedation in the setting of digestive endoscopy not only because of its effectiveness but also of its efficiency. Because of this, in the costs analysis it is necessary to include the time needed to reach a sedation status (longer with hypnosis than with drugs) and for recovery (shorter with hypnosis than with drugs).

As occurs with anesthetic drugs, clinical hypnosis also has risks and contraindications: in fact, hypnosis should

be held back for candidates suffering from psychotic disorders, serious personality disorders, and epileptic attacks, since hypnotic induction can unbalance these processes. Hypnotic procedures in a hospital unit should be carried out by healthcare professionals with a suitable curriculum not only to work with hypnosis, but also to know how to control psychic answers that can happen during this kind of exploration, that is, by clinical psychologist. But at the same time, as it is not necessary to acquire all the knowledge on drugs that anesthesiology specialist has to be entitled to use some of them, the teaching and use of hypnotic techniques are not exclusive of psychologists, and can be learnt by gastroenterologists or nursing staff. Generally, and besides psychic pathologies, it is important to consider that clinical hypnosis can be harmful when the aims of the physician are not consistent with patient interests, when the physician is not adequately familiar with the procedures, or when the capacity of the patient to reach adequate analgesia with hypnosis is insufficient.

Clinical hypnosis is capable of modifying both the sensitive and emotional components of pain. The use of these technologies has revealed that the patient knows the pain is still present, but in a bearable form. In addition, despite inconveniences, the exploration goes on until the end and later amnesia develops. During the procedure the patient under hypnosis is still conscious, and can express moments of intensity to avoid complications such as perforation. Having been an active and not a passive subject, they usually feel well informed, better treated, and a part of the process.

Coinciding, therefore, with Sáenz-López et al. (26), we have started to work in order to develop a prospective study to evaluate other sedation techniques that could be used for digestive endoscopy. Specifically, clinical hypnosis –which we prefer to call selective process of dissociated focusing (SDF)– seems to be very promising, and if preliminary results are confirmed, would be taken into consideration as an emerging healthcare technique.

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