

## THIOPENTAL (PENTOTHAL) REACTIONS AND THEIR TREATMENT WITH ACTH

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DURING the past five years we have used thiopental as an adjuvant to the treatment of chronic alcoholism in 1027 patients. Most of these patients received thiopental in conjunction with psychotherapy and the aversion treatment. Thiopental has been of value not only in narcosis and narcosynthesis but especially as a means of providing relaxation and relief from the nervous and emotional tensions from which the alcoholic so often suffers. Thiopental, administered at increasingly infrequent intervals over a period of a few months to a year, has been of great assistance in helping many of our patients to learn to live without alcohol (1).

From 0.3 to 1.0 grams of thiopental is given during each injection. The treatment takes from 15 to 60 minutes. During the first part of the treatment, the level of anesthesia is light enough for the patient to be questioned concerning his problems. At the termination of the treatment, the patient is put under deeper anesthesia so that he may sleep as long as possible.

From five to eight thiopental injections are given in the first series of treatments which lasts from one to two weeks, depending upon whether the thiopental is given alone or on alternating days with aversion treatments. Following this, the patient returns for a thiopental treatment once a week for a few weeks, then once every two or three weeks and finally once every month or two depending on the case. The average number of thiopental treatments per patient has been fifteen. A total of 15,405 treatments, therefore, has been given by us during the past five years. This has afforded us an unusual opportunity to observe any complications that might arise over a period of time.

### IMMEDIATE ADVERSE REACTIONS

Although this group of complications is not the main concern of this report, it will be described briefly because it has not been stressed in the literature. Vomiting, sometimes precipitous and without warning, is the most serious reaction because of the danger of aspiration and

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asphyxia. Turning the patient over the edge of the bed with his head and shoulders in a dependent position, the use of suction, the premedication with atropine and the avoidance of food before the thiopental treatment are means of dealing with this emergency. Cessation of respiration from too deep an anesthesia or obstruction of the tongue can be overcome by elevating the lower jaw, turning the patient on his side, and using an airway, artificial respiration and oxygen, if necessary. Coughing and choking from laryngeal spasm has occurred regularly in some patients and occasionally has necessitated discontinuance of thiopental therapy in these cases. A few of these patients have been able to tolerate sodium amytal in this respect and we have been able to continue therapy by giving this instead of thiopental.

An unusual and interesting reaction that has been described only once before (2) is the development of muscular spasms during the administration of thiopental. These may be localized in one or more extremities but most often they are generalized in nature and may consist of clonic jerking motions, tonic contractions or a combination of these. The spasms usually resemble those seen in decerebrate rigidity but 2 patients had typical epileptic-like convulsions. If a patient is subject to these spasms under thiopental, they will recur with each treatment.

#### DELAYED REACTIONS

These reactions are the main concern of this report because they have not been described before and they respond well to ACTH. The most common delayed reaction that we have observed is one of general malaise with aching, weakness and fever up to 104 F. This reaction comes on from one to twenty-four hours after thiopental treatment and may last from one to five days unless treated. It may occur after the first thiopental treatment but usually manifests itself with increasing severity after several thiopental treatments have been given. In all, we have observed this reaction in 32 of the 1,027 patients treated with thiopental.

We have found that 25 to 50 mg. of ACTH given immediately and followed by 25 mg. at eight-hour intervals will almost always eliminate this reaction within twenty-four hours.

Other delayed reactions that we have observed have been generalized skin rashes, joint pains and in one patient, a monarticular arthritis with swelling, redness and pain in a knee that had been injured twenty years previously but had given no trouble since. ACTH has also relieved these reactions.

A complication not related to the above described reactions and not responsive to ACTH has been a temporary increase in general nervous tension the day following thiopental therapy. Fortunately, this does not occur frequently but may so interfere with treatment that therapy may have to be discontinued. Another complication has been the

marked tendency for some patients to develop thrombosis in the veins used for the injections.

#### COMMENT

The delayed complication of malaise, fever, skin and joint reactions appears to be an allergic type of response to thiopental. The prompt response to ACTH supports this idea. These reactions could not have been due to rubber tubing as most of the thiopental was administered by syringe, nor were they associated with any one particular lot of thiopental. Interestingly enough, we have not observed this reaction to sodium amytal and have been able to continue therapy by substituting this for thiopental.

Although these delayed reactions concern chiefly psychiatrists giving thiopental interviews, they might conceivably be of interest as a possible complication of thiopental anesthesia. Some hitherto unexplained postoperative fevers and malaise have probably been on this basis and would respond equally well to ACTH. The frequent use of thiopental in military psychotherapy makes recognition of these possible reactions especially important at this time.

#### SUMMARY AND CONCLUSIONS

In 32 of 1027 patients given an average of fifteen thiopental treatments a delayed reaction developed, consisting of fever, arthralgia, skin rashes, weakness and general malaise lasting up to five days. These reactions responded promptly to the administration of ACTH. Other complications of thiopental treatments have been vomiting, cessation of respiration, coughing and choking from laryngeal spasm, muscular spasms, convulsions, nervous tension and thrombosis of the veins used for injection.

Since submitting this report, we have had four additional cases. One patient, after her sixth pentothal treatment, exhibited a fever of 101 F. which at first was believed to be due to an incipient upper respiratory infection, but this did not develop. Consequently, we gave her another treatment three days later, after which her fever went to 104 F.

#### REFERENCES

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