THE JOHNS HOPKINS HOSPITAL

BALTIMORE 5, MARYLAND

September 29, 1948

Mr. Erik Bjaringer
Astra Pharmaceutical Products, Inc.
444 Madison Avenue
New York 22, New York

Dear Mr. Bjaringer:

You will find enclosed the summary of our experience with the first forty cases of XYLOCAINE during labor and delivery, and cesarean section. We have continued the use of this agent in an additional sixty cases that will not be ready for coding for several weeks. This information will be added to that enclosed, and will be given to you in due time.

All of these cases of continuous peridural will be reported in our series of 100 introducing this new technic in obstetrics in Montreal at the International Congress of Anesthesia. The date for this presentation is on Wednesday, October 20 (not on Tuesday, as I informed you by telephone today). We will be pleased to see you at this meeting if you are able to come.

Sincerely,

Robert A Hingson M

Robert A. Hingson, M.D.
Associate Professor of Obstetrics
(signed in Dr. Hingson's absence)

RAH:N

PRELIMINARY REPORT ON THE USE OF XYLOCAINE FOR ANESTHESIA AND ANALGESIA.

We present the following preliminary report on the use of the new local anesthetic agent, XYLOCAINE, at the Johns Hopkins Hospital under the supervision of Dr. Robert A. Hingson. This report is based on the use of XYLOCAINE in 40 cases employing 4 different technics: i.e., continuous caudal, continuous peridural, continuous Tuohy spinal, and "single shot" saddle block spinal anesthesia and analgesia. The number of each type used and the general results are presented in the following table:

Type	Number	Successful	Partially successful	Failure
Caudal	15	14	1	0
Peridural	19	18	0	1
Tuohy Spinal	4	4	0	0
Saddle block	2	1	1	0

In the remainder of this report we will discuss the various types of anesthesia and analgesia and the results with each technic.

1. Continuous caudal analgesia (catheter technic): 15 cases.

In 14 cases XYLOCAINE was used for labor and delivery. The 15th case was one of a 53-year old man with chronic hypertension and bronchitis in which caudal anesthesia was employed for hemorrhoidectomy and repair of rectal fistulae and control of post operative pain.

In 13 cases XYLOCAINE with adrenalin 1:150,000 was used; in one case two per cent XYLOCAINE was used, and in the others both 1 per cent and 2 per cent XYLOCAINE was employed.

In only one case was the analgesia and anesthesia unsatisfactory. The patient received a total of 55 ccs. of 1 per cent XYLOCAINE with adrenalin

over a period of one hour, five minutes. Partial perineal anesthesia was obtained at the end of this time satisfactory for spontaneous delivery with episiotomy.

In tabular form the results obtained in the 14 successful cases are as follows:

Relief of pain in 3 - 38 minutes with 6 to 30cc of XYLOCAINE
Average 22 minutes with 22 cc. of XYLOCAINE
Average single dose of 7-13.5 cc., averaging 9.8 cc.
Total dose of 19-110 cc., averaging 53.7 cc.
Duration of relief: 45 minutes - 12 hours, averaging 4 3/4 hours
Reactions: (1) Blood pressure drop requiring therapy in 4 cases
(2) Beneficial blood pressure drop in toxemia in 2 cases.
(3) Blood pressure rise (adrenalin effect) 3 cases.

2. Continuous peridural analgesia (catheter technique): 19 cases.

All 19 cases of continuous peridural analgesia and anesthesia were in obstetrical patients; 17 were for labor and delivery and 2 for cesarean section. In one case 2 per cent XYLOCAINE with adrenalin 1:100,000 was used; in the others 1 per cent XYLOCAINE with adrenalin 1:100,000 was used.

There was one unsuccessful case in which both failure to obtain analgesia and an adrenalin reaction necessitated discontinuance of the technic. This patient also failed to obtain analgesia with a metycaine caudal. The possibility that this patient would not receive relief from any form of conduction anesthesia must be borne in mind.

The results obtained in the 18 successful cases are as follows:

Relief of pain in 4-90 minutes with 2-14 cc.
Average 21 minutes with 9 cc.
Average single dose of 3-8 cc. averaging 5.2 cc.
Average total dose of 11-77 cc. averaging 34.3 cc
Duration of relief, 1-8 hours, averaging 4 hours
Reactions: (1)Blood pressure drop requiring therapy, 0 cases
(2)Beneficial blood pressure drop in toxemia, 5 cases
(3)Blood pressure rise (adrenalin effect) 3 cases

3. Continuous Tuohy Spinal analgesia and anesthesia: 4 cases.

Three cases were in obstetrical patients; one in a woman with severe hypertensive cardiovascular disease with 5 days of anuria. Results in this last case were highly gratifying. In two of the obstetrical labor and delivery was satisfactorily conducted by this technic. In the other the method was employed for laparatomy for tubal ligation.

Relief of pain in all cases was obtained within less than one minute with 1 cc. of XYLOCAINE, 1 per cent with adrenalin 1:100,000. The average total dose was 7 cc. in 1-2 cc. doses, and anesthesia was obtained for from 2-6 hours as needed.

4. Saddle Block Analgesia with Heavy XYLOCAINE: 2 cases.

The heavy XYLOCAINE was obtained by mixing 2 per cent XYLOCAINE without adrenalin with 1 cc. of 10 per cent dextrose. The first case was carried out employing 1 cc. of 2 per cent XYLOCAINE (20 mgms). Within 5 minutes this produced excellent perineal anesthesia lasting one hour, thirty minutes. Relief of labor pains was not obtained. In the second case 1 1/2 cc. of 2 per cent XYLOCAINE (30 mgms) was used. Within five minutes this produced satisfactory relief of labor pains lasting past delivery one hour later. There were no reactions. Recently a similar success (not recorded in this report) was obtained with the same 30 mgm. dose using 2% XYLOCAINE with adrenalin 1:100,000. We believe that these cases constitute the first use of saddle block with heavy XYLOCAINE in obstetrics.

SUMMARY

XYLOCAINE has proved to be an eminently successful agent for conduction anesthesia, particularly in obstetrics. In our experience with this new agent, the claim of Lofgren (Studies in Local Anesthetics: Xylocaine, a new Synthetic

Drug; N. Lofgren, Stockholm, 1948) that it is a potent local anesthetic agent generally producing anesthesia in a shorter time and for a longer period with smaller doses than others commonly employed is substantiated. In our hands in these respects it is as good and usually better than metycaine. With regard to this, it is interesting to note results in three cases managed under our auspices in another hospital. In one a previous labor under caudal analgesia had required 98 cc. of metycaine; the present labor was conducted under caudal with 22 cc. of XYLOCAINE. In the second case, the subsequent labor under XYLOCAINE required only one-half the amount that had been required to conduct caudal analgesia with metycaine. In a third case of continuous caudal analgesia, culdoscopy and a pelvic abdominal operation were carried out using 18 ccs. of XYLOCAINE. Anesthesia with this dose lasted 1 hour, 30 minutes.

We have encountered occasional side effects during analgesia and anesthesia. However, these are certainly no more than with other drugs. Nausea and vomiting has been noted in three cases and muscular twitching and chilling in 4 cases. In none of these cases was it necessary to discontinue the use of XYLOCAINE. On the other hand, there have been definitely less blood pressure falls with XYLOCAINE, with or without adrenalin than with other drugs. Because of this and because of the six adrenalin effects obtained, we are now investigating more thoroughly the use of XYLOCAINE without adrenalin. Tentatively, in our hands XYLOCAINE alone exhibits a mild vaso-pressor response. It would therefore seem that XYLOCAINE is ideally suited for conduction anesthesia and analgesia, except for cases in which it is desired to obtain a blood pressur e drop, such as toxemias of pregnancy, and chronic hypertensive disease.

George W. Carmer, Jr., M.D.

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