TITLE: EXPERIMENTAL RESUSCITATION OF BUPIVACAINE (B) CARDIOTOXIC ACCIDENTS : EFFICACY OF CLONIDINE (CLO) - DOBUTAMINE (D) COMBINATION.

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B-induced cardiotoxic events are very often difficult to resuscitate (1). Indeed, B overdosage directly impaired both contractility (2) and electrophysiology (3). CLO was demonstrated to reverse the slowing of ventricular conduction and D to improve the hemodynamic status (4). The aim of the study was to analyse the effects of this combination in anesthetized dogs poisoned with B. Twelve dogs were allocated in two groups (n= 6). All of them where anesthetized with pentobarbital (40 mg/kg iv.), intubated, mechanically ventilated and maintained at constant PaO_2, $PaCo_2$, pH and temperature. They received 0.2 mg/kg iv atropine, to avoid any vagal reaction, then 4 mg/kg iv B over a 10 second period. Electrophysiologic data recorded by ECG and endocavitary electrode were: RR, PR, Atria-His (AH), His-ventricle (HV) intervals and QRS duration. Hemodynamic data were: mean aortic pressure (BP), left ventricular end diastolic pressure (LVEDP) and LVdp/dt max (Millar 5F, Gould differenciator). All recordings were made before, and 1, 2, 3, 4, 5, 10, 15 and 30 min after the end of B injection. In addition, group 2 was given 0.01 mg/kg iv CLO from 1 to 2 min after B injection, then a D infusion (5 ug/kg/min) from 3 to 30 min after B injection. ANOVA and "t" test were used.

One min after B injection, all data were impaired in the two groups, specially PR (Gr 1: + 56.8%, $p < 0.001$; Gr 2: + 65.1 %, $p < 0.001$), HV (Gr 1: + 130.3 %, $p < 0.001$; Gr 2: + 158.2%, $p < 0.001$), QRS (Gr 1: + 90.1 %, $p < 0.001$; Gr 2: + 115.9%, $p <$ 0.001), LVEDP (Gr 1: + 51.8%, Gr 2: + 44.1%, $p < 0.05$) and LVdp/dt max (Gr 1: - 57.2%, $p < 0.01$; Gr 2: - 55.1%, $p <$ 0.001). In Group 2, CLO significantly improved HV (table) and QRS (Gr 1 vs Gr 2: $p < 0.05$ at 10 and 15 min, $p < 0.01$ at 30 min). D significantly improved LVdp/dt max (table) and LVEDP (Gr 1 vs Gr 2: $p < 0.01$ at 10 min, $p < 0.05$ at 15 min). Moreover, RR, AH, BP were not modified by CLO + D. CLO reduced the worsening of ventricular conduction velocities induced by B. One could suggest that CLO protected against the occurence of ventricular arrhythmias-induced reentry. B-induced contractility depression was reversed by D infusion. Therefore, the combination of CLO + D can resuscitate B overdosage in anesthetized dogs.

1. Anesth Analg 69 : 403-406, 1989
2. Anesth Analg 69 : 732-735, 1989
3. Anesth Analg 67 : 107-114, 1988
4. Anesthesiology 71 (3A) : A657, 1989

		< CLO (Gr2)			> <		D infusion (Gr2)		>
Min after B :		1	2	3	4	5	10	15	30
	1 :	62.2 ± 4	63.0 ± 3.6	62.5 ± 3.6	62.5 ± 3.6	60.0 ± 4.3	52.5 ± 3.8	46.0 ± 4.8	41.7 ± 4.6
HV (msec)	2 :	68.0 ± 3.6	57.5 ± 2.8	p<0.01 44.5 ± 1.7	p<0.01 44.2 ± 3.5	p<0.05 42.5 ± 4.4	p<0.001 28.7 ± 2.1	p<0.01 26.0 ± 1.1	p<0.01 24.7 ± 1.2
	1 :	737.5 ± 92.6	783.3 ± 74.9	816.7 ± 86.2	816.7 ± 78.2	883.3 ±77.1	941.7 ± 61.1	1008.3 ± 72.4	1350 ± 110.3
LVdP/dt (mmHg/s)	2 :	550 ± 75.3	525 ± 75	491.7 ± 75.7	1116.7 ± 310.6	p<0.05 1325.0 ± 238.3	p<0.05 2558.3 ± 587.1	p<0.01 2258.3 ± 340.7	p<0.01 1416.7 ± 145.3

Values are means ± SEM
Gr2: CLO from 1 to 2 min, D from 3 to 30 min after the end of B injection.

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TITLE: ANTERIOR PSOAS SHEATH IDENTIFICATION FOR LUMBAR SYMPATHETIC BLOCK

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Lumbar sympathetic block provides a sympathectomy of the lower extremity and is useful in a variety of clinical conditions ranging from circulatory insufficiency to causalgia and phantom limb pain. Complications associated with this procedure have been reported to include disk penetration, subarachnoid injection, bleeding, renal damage and genitofemoral neuralgia. Consequently, fluroscopic guidance of needle placement is used in most centers to guard against complication.

Anatomically, it is not necessary to place the needle tip immediately adjacent to the body of the vertebrae to have a successful block. After the needle tip has pierced the psoas fascia, it will be in the same loose areolar tissue that surrounds the lumbar sympathetic ganglia. Ten patients from the Pain Clinic who were diagnosed either with reflex sympathetic dystrophy or referred for lumbar sympathetic block for circulatory insufficiency were used in this study. Patients were blocked using the approach of Hatangdi and Boas(1) at the second or third lumbar level(2) in the prone position. The needle was advanced into the substance of the psoas muscle as indicated by the "psoas stripe" on the fluoroscopy screen in the P-A view. 0.5 ml of Conray^R was injected giving a characteristic picture of longitudinal lines along the muscle bundles. The needle was then advanced under continual fluroscopic guidance until tenting of the psoas fascia was visualized, and the needle "popped" through. Lateral and oblique fluroscopic views as well as additional contrast injections were made to confirm correct needle placement. All ten patients had successful sympathectomies as judged by temperature increase of at least 3° celsius on the blocked side. No complications up to one month followup were noted.

This clinical report demonstrates that identification of psoas muscle via contrast media injection under fluoroscopy and the subsequent tenting and puncture of the psoas fascia with a six inch 22 gauge needle is a definite aide in the correct placement of the needle for lumbar sympathetic block. In ten patients in which this psoas tenting technique was used, the needle position was subsequently proven by further fluoroscopy and clinical results to be correctly placed in 100% of the cases. The authors conclude that this method is a valuable adjunct in fluoroscopy guided lumbar sympathetic block.

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2. Umeda S, Toshiyuki A. Cadaver anatomic analysis of the best site for lumbar sympathectomy. Anesth Analg 66:643, 1987