

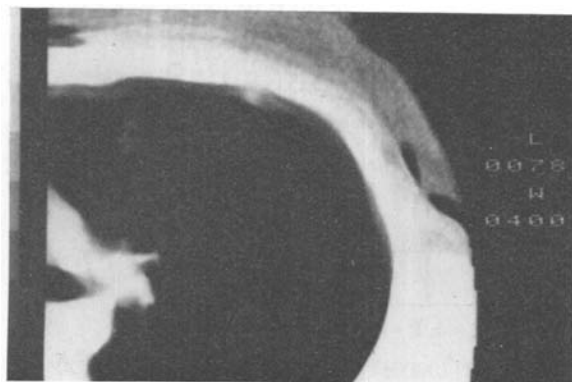
Short communication

FIG. 4.

Composite picture obtained on the independent viewing console by averaging out the information from the adjacent cuts. This shows the exact site of the artefact in relation to the rib above.

tissue density by partial volume effect. This occurrence has been seen occasionally in children where the curvature of the thorax is relatively more pronounced. Clearly, in some patients the indentation into the parietal pleura by the rib will be more prominent than in others. No doubt this rib artefact will be less of a problem with scanners capable of producing thinner cuts. Hopefully misinterpretation can be avoided by careful viewing of adjacent cuts at different levels and window widths.

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A comparative trial of three oral cholecystographic contrast media— iocetamic acid, iopanoic acid and sodium ipodate

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Three hundred consecutive patients referred for oral cholecystography were randomly allocated to one of three groups: iocetamic acid (Cholebrin) (95), iopanoic acid (Telepaque) (101) and sodium ipodate (Biloptin) (104). Following routine preparation for the study, a control film was taken. Where bowel preparation was adequate, each patient was given a numbered packet containing 3 g of contrast medium which was taken on the evening before the formal oral cholecystogram. At the beginning of the study—normally 14 hours following ingestion of the contrast material—the supervising radiologist checked the patient's weight and confirmed that both the aperient and the oral cholecystographic agent had been taken. Contrast related symptoms were assessed using a standard questionnaire and, following this, a routine series of coned films of the gall bladder area were obtained. These included a prone oblique, a supine oblique and an erect film, as well as a repeat prone oblique view 30–40 minutes after a fatty meal. The gall bladder did not opacify in 55 patients given a single dose of contrast, and of these 33 had a repeat study with a double-dose a week after the initial examination.

RESULTS

Radiological assessment

Gall bladder opacification (Table I) was classified as good in 42% of patients given iocetamic acid, 38% of those given iopanoic acid and 32% receiving sodium ipodate. The differences in the results classified as good were not statistically significant, as assessed by the χ^2 test ($0.5 > P > 0.1$).

There was no correlation between weight and non-visualization of the gall bladder. The mean weight of 168 weighed cases whose gall bladder opacified was 68.95 kg, as compared with a mean weight of 70.31 kg in the 28 weighed cases whose gall bladder did not opacify. The difference was not significant ($P > 0.5$). Gall stones were demonstrated in 51 patients.

Opacification of the common bile duct before a fatty meal (Table II) occurred in 24% of the iocetamic acid cases, 36% of the iopanoic acid cases and 20% of the sodium ipodate cases. The superiority of iopanoic acid was significant at the 0.05 level when a χ^2 test was applied ($0.5 > P > 0.02$).

Opacification of the common bile duct 30–40 minutes after a standard fatty meal given to 256 patients (Table III) occurred in 47% of the iocetamic acid group, 52% of the iopanoic acid group and 44% of the patients taking sodium ipodate. These differences were not statistically significant ($P > 0.5$). The giving of a fatty meal increased the proportion of patients in whom the common bile duct was visualized by 53% (123 patients in total, Table III, compared with 80, Table II).

Double dose studies (Table IV): 33 of the 54 patients whose gall bladders did not opacify initially were re-examined following a double-dose of contrast given a week after the first study. The biliary tree was visualized in a proportion of these cases, but the reasons for this are obscure (Berk, 1970). The differences in the rates of opacification of the gall bladder were not significant in the three groups ($\chi^2 = 1.8$ d.f. = 6 $P > 0.5$).

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TABLE I
GALL BLADDER OPACIFICATION

	Cholebrin	Telepaque	Biloptin	Total
Nil	16	22	16	54
Poor	20	14	24	58
Fair	19	27	31	77
Good	40	38	33	111
TOTAL	95	101	104	300

$\chi^2=7.141$ d.f. = 6. $0.5 > P > 0.1$

TABLE II
COMMON BILE DUCT OPACIFICATION—BEFORE FATTY MEAL

	Cholebrin	Telepaque	Biloptin	Total
Absent	72	65	83	220
Present	23	36	21	80
TOTAL	95	101	104	300

$\chi^2=6.66$ d.f. = 2. $0.05 > P > 0.02$

TABLE III
COMMON BILE DUCT OPACIFICATION—AFTER FATTY MEAL

	Cholebrin	Telepaque	Biloptin	Total
Absent	43	40	50	133
Present	38	45	40	123
TOTAL	81	85	90	256

$\chi^2=1.33$ d.f. = 2 $P > 0.5$

Unabsorbed gut residues (Table V): in 60.5% (181) of the patients, no contrast residues were seen on the radiographs. Moderate residues were present in 22.5% (68), and gross residues were seen in 17% (51). Residues did not interfere with the assessment of the appearances of the gall bladder and the common bile duct. They were most often seen with iopanoic acid and least often with sodium ipodate.

Side effects (Table VI) most commonly complained of in response to direct questioning were nausea, headache, dizziness and diarrhoea. Headache was slightly more frequent in patients taking sodium ipodate ($\chi^2=5.164$ d.f. = 2 $0.01 > P > 0.05$), but there was no important difference in the incidence of the other symptoms reported by the three groups of patients. Only one patient spontaneously complained of abdominal discomfort, and there were no reports of flatulence or an unusual taste in the mouth.

COMMENT

Iocetamic acid (Cholebrin), sodium ipodate (Biloptin) and iopanoic acid (Telepaque) showed no significant differences in their ability to opacify the gall bladder. Contrast related symptoms are common, but the incidence of any particular symptom is highly dependent on the type of questionnaire used (Owen and Lavelle, 1978; Fielding and Whitehouse, 1979), and on the method of assessment. Unabsorbed contrast residues did not interfere with interpretation of the appearances of the biliary tree. These findings suggest that the cheapest of the three contrast materials would be satisfactory.

TABLE IV

GALL BLADDER OPACIFICATION (NON-OPACIFIERS)—DOUBLE DOSE

	Cholebrin	Telepaque	Biloptin
Nil	7	6	7
Poor	2	2	3
Fair	1	1	0
Good	1	2	1
TOTAL	11	11	11

$\chi^2=1.8$ d.f. = 6. $P > 0.5$ N.S.

TABLE V
GUT CONTRAST RESIDUES

	Cholebrin	Telepaque	Biloptin	Total
Nil	63	33	85	181
Moderate	16	39	13	68
Gross	16	29	6	51
TOTAL	95	101	104	300

$\chi^2=10.1185$ d.f. = 2. $0.001 > P$

TABLE VI
SYMPTOMS

Symptom	No. of Patients			
	Cholebrin	Telepaque	Biloptin	Total
Nausea	10	6	10	26
Headache	7	4	13	24
Dizziness	5	6	7	18
Diarrhoea	2	12	2	16
Polyuria	5	5	4	14
Dysuria	0	7	3	10
Oliguria	2	2	4	8
Vomiting	3	0	1	4
Pruritus	1	1	1	3
Urticaria/Rash	1	0	2	3
Wheeze	0	0	1	1

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