

CHATER 4

RESULTS

BASE LINE DATA

Fifty four adult patients with CHCA participated in this study. The number of patients was equal to the calculated sample. Two patients with an unconfirmed diagnosis of CHCA were excluded from the study. Operative findings and final diagnosis of these two cases were; a very large common bile duct stone and tuberculous lymphadenopathy respectively.

The average age (\pm SD) of patients was 55.2 (\pm 9.8) years. There were more male patients (39 cases) more than female patients (15 cases) or 2.6 times the number. (see table 2.) Because Srinagarind Hospital is the referral center for Northeast Thailand, CHCA patients predominantly came from Khon Kaen and near-by provinces. About 70% of CHCA cases involved the hilar region. The rest were patients with CHCA of the common bile duct and intrahepatic CHCA. However but about 55% of patients had tumors in more than one location, Table 3.



Table 2 Baseline data of patients with CHCA

	Total	Male	Female
Number of patients(%)	54	39 (72.2%)	15 (27.8%)
Age			
Mean	55.2	55.5	54.4
S.D. \pm	9.8	10.1	9.1
Range	36-72	37-72	36-70

The study contained 54 cases. This figure represents 100% of the expected sample size of 54 patients with CHCA.

Patients underwent operations 1-39 days after the MRCP, with a median of 12 days. Only one case had a wait period of more than 30 days. The mean (\pm SD) was 13.6 (\pm 8) days.

Table 3 Location of CHCA .

Pure hilar		10
Pure common duct		10
Pure intrahepatic		4
Right lobe	4	
Left lobe	0	
Both lobes	0	
Hilar & intrahepatic		14
& right lobe	10	
& left lobe	2	
& both lobes	2	
Hilar & common duct		11
Common duct & intrahepatic		2
& right lobe	1	
& left lobe	1	
& both lobes	0	
Hilar & common duct & intrahepatic		3
& right lobe	2	
& left lobe	1	
Total		54

MRCP IN ASSESSING HILAR CHCA AND COMMON DUCT CHCA

MRCP for the diagnosis of hilar CHCA:

Thirty eight patients had hilar CHCA (by intraoperative assessment) a prevalence of 70.4% (38/54). These included 10 cases of pure hilar CHCA, 14 cases who had a combination of hilar and intrahepatic locations, 11 cases who had a combination of hilar and common duct CHCA and 3 cases who had a combination of CHCA in 3 different locations.

All 38 hilar CHCA lesions were correctly detected by MRCP. False positive diagnosis of hilar CHCA was found in 2 cases. Fourteen cases of normal MRCP findings of hilar regions were confirmed by operative findings. No false negative findings of hilar CHCA were found in the study. (Table 4.)

Figure 11. MRCP of hilar CHCA

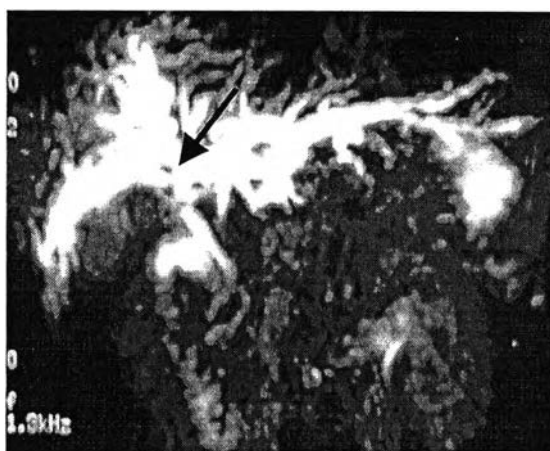


Figure 12 MRCP of hilar CHCA and common duct CHCA

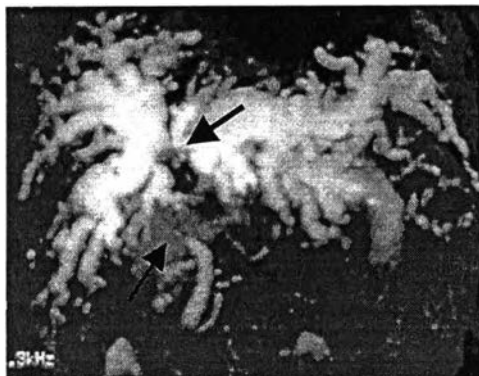


Figure 13 MRCP of hilar CHCA and left lobe intrahepatic CHCA

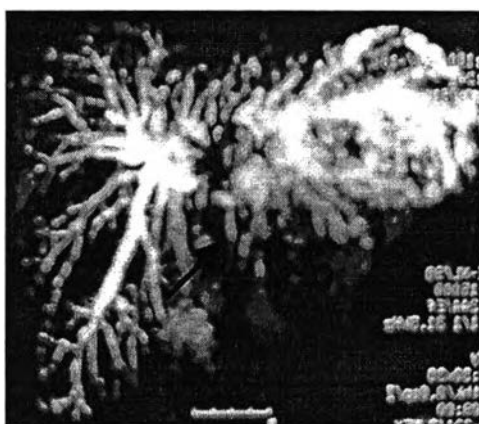
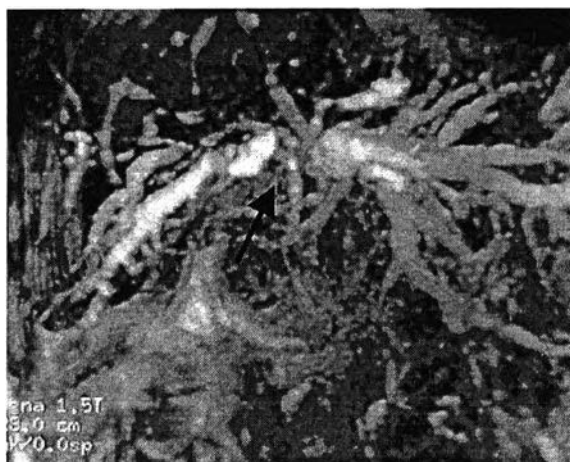


Figure 14 MRCP of hilar CHCA and right lobe intrahepatic CHCA



Figure 15. MRCP of hilar CHCA



MRCP for the diagnosis of CHCA at the common duct:

In our study, CHCA at the common duct was proved by operative finding in 26 cases, 48%(26/54). Ten cases had CHCA located only at the common bile duct. The remainder had CHCA in more than one location. Patients with CHCA at the common duct were diagnosed by operation in 23 of 26 cases.

Three cases of these 26 common duct CHCA patients were not visualized by MRCP, resulting in a false negative. No false positive diagnosis of CHCA at the common duct was recorded.

Figure 16 MRCP of CHCA at the common duct.

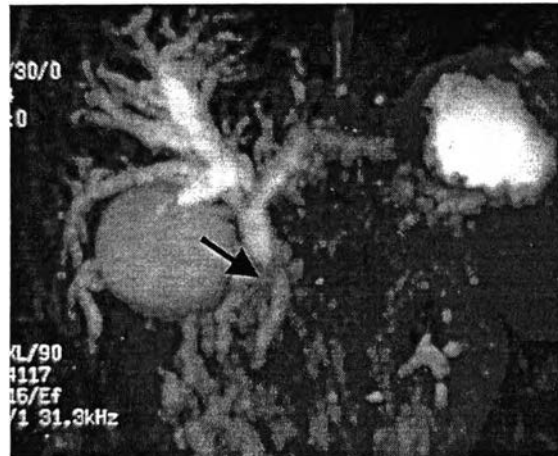


Figure 17. MRCP of CHCA at the distal common duct



Figure 18 MRCP of CHCA at the common duct and hilar CHCA

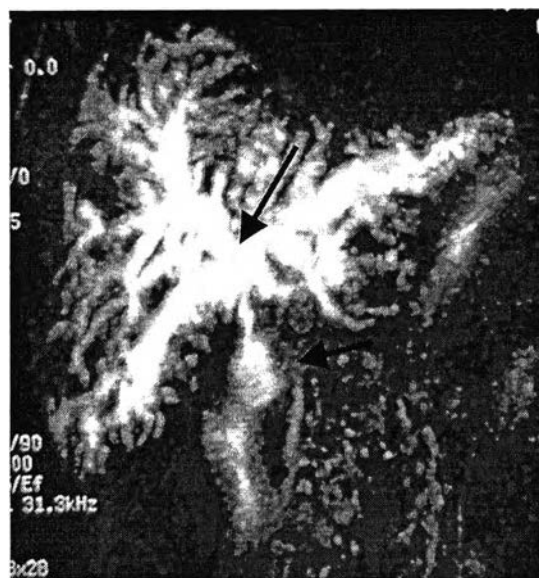
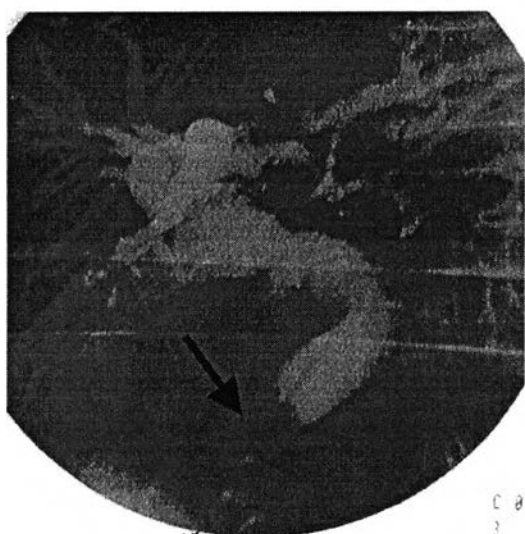


Figure 19 ERCP (A) and MRCP (B) of CHCA at the distal common duct in the same patient.

A



B



Figure 20 MRCP of CHCA at the proximal common duct.

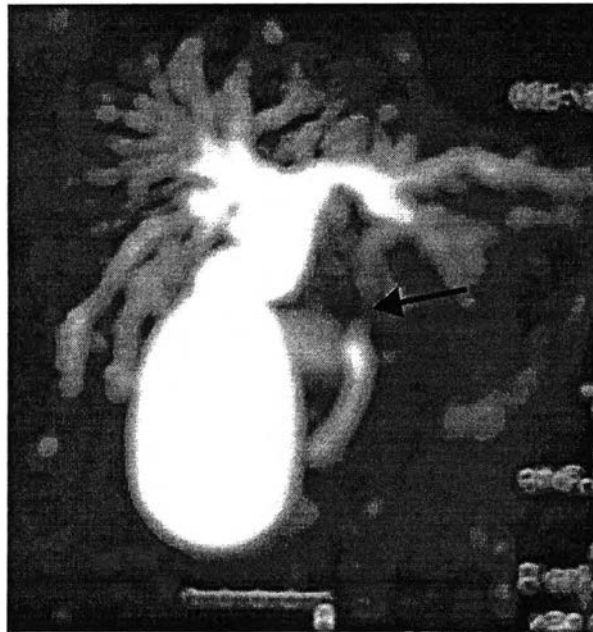
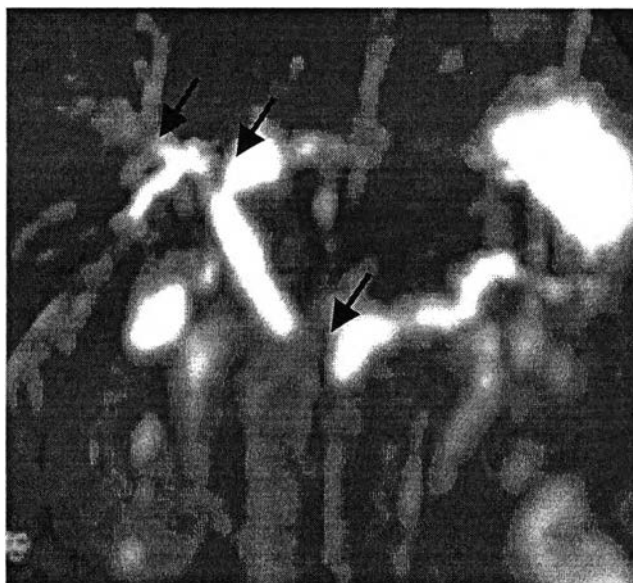


Figure 21 MRCP of CHCA at the common duct, hilar and right lobe.



PERFORMANCE OF MRCP

Table 4 MRCP versus operative findings in patients with hilar CHCA

MRCP Finding	Operative finding		Total
	+	--	
+	38	2	40
--	0	14	14
Total	38	16	54

Sensitivity	=	100.0% (95% lower CI; 90.7%)
Specificity	=	87.5% (95%CI; 61.6%, 98.4%)
Accuracy	=	96.3% (95%CI; 87.3%, 99.5%)
PV+	=	95.0% (95%CI; 83.1%, 99.4%)
PV-	=	100.0% (95% lower CI ;76.8%)
Post-test likelihood if test negative	=	0
Likelihood ratio	=	8

**Table 5 MRCP versus operative findings in patients with
CHCA at the common duct**

MRCP finding	Operative finding		Total
	+	--	
+	23	0	23
--	3	28	31
Total	26	28	54

Sensitivity	=	88.5% (95% CI; 69.8%, 97.6%)
Specificity	=	100.0% (95% lower CI; 87.7%)
Accuracy	=	94.4% (95% CI; 84.6%, 98.8%)
PV+	=	100.0% (95% lower CI; 85.2)
PV-	=	90.3% (95% CI; 74.2%, 97.9%)
Post-test likelihood if test negative	=	9.7%
Likelihood ratio	=	infinity

Correlation between MRCP and operative findings may be presented as a K (Kappa) statistic. The agreement between the findings of the MRCP and the operative findings of hilar CHCA and common duct CHCA were measured as a **Kappa value of 0.91 and 0.88 respectively.**