

Comparative Study of Lacrimal Dacryoscintigraphy and Contrast Dacryocystography in Patients with Epiphora

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INTRODUCTION

Epiphora is a common ophthalmologic problem due to stricture of lacrimal passage. There are two imaging tools in the evaluation of epiphora: contrast dacryocystography (CD) and lacrimal dacryoscintigraphy (LDS). Although CD can provide detailed anatomic information of lacrimal passage, it is less helpful in the evaluation of functional status. Therefore, some discordance between the results of CD and the clinical features may occur. However, LDS can provide functional information, though anatomic resolution is not so satisfactory.

The purposes of this exhibition were (1) to evaluate the concordance rate between clinical features and the imaging findings and (2) to calculate positive/negative predictive values of both diagnostic modalities in patients with epiphora.

MATERIALS AND METHODS

We retrospectively reviewed CD and LDS of 50 patients (M:F=21:29). Therefore, one hundred eyes were included in this study. Among one hundred eyes, 75 eyes were epiphoric and 25 were normal.

We assessed the concordance rate between clinical features and findings of CD and LDS. The positive and negative predictive values were also calculated. And we also evaluated the ability to localize obstruction sites.

RESULTS

The concordance rate between epiphora and imaging findings was 60% for CD and 85% for LDS. The positive and negative predictive value was 92%, 41% for CD and 93%, 65% for LDS (Table 1). CD was superior to LDS in the localization of obstruction site (Fig.1, 2). Symptom correlation with imaging findings was more excellent in LDS (Fig.3,4).

TABLE 1. Correlation of Epiphora with CD and LDS

	CD	LDS
Concordance rate	60%(45/75)	85%(52/75)
Positive predictive value	92%(69/75)	93%(70/75)
Negative predictive value	41%(10/25)	65%(16/25)

Fig.1. A 53-year-old woman with epiphora in left eye. CD is superior to LDS in anatomic localization.

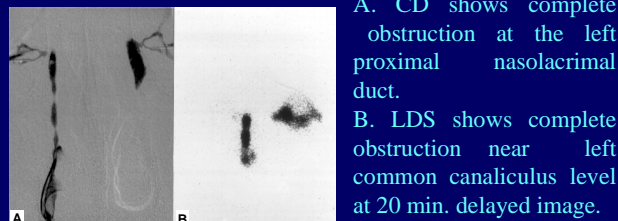


Fig.2. A 62-year-old woman with epiphora in both eyes. CD is superior to LDS in anatomic localization.

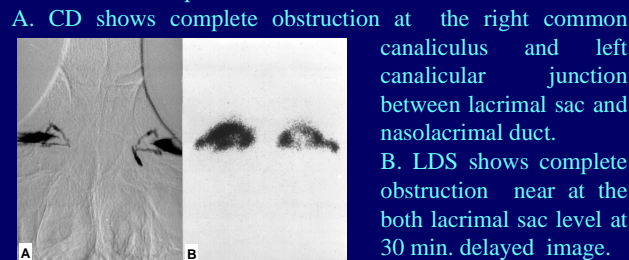


Fig.3. A 55-year-old woman with epiphora in both eyes. Symptom is better correlated with LDS than CD.

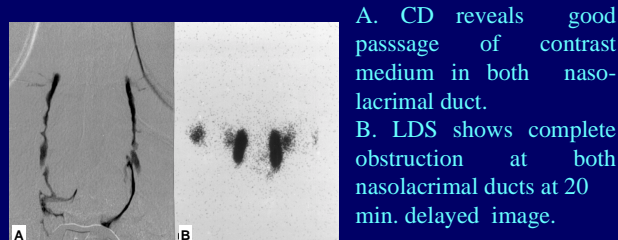
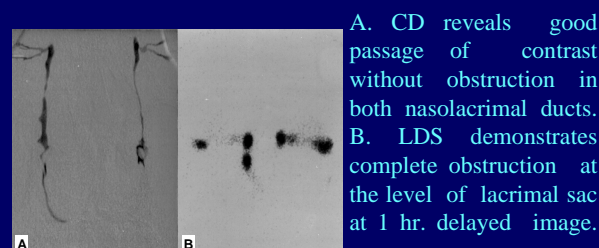


Fig.4. A 64-year-old woman with epiphora of left eye. Symptom is better correlated with LDS than CD.



DISCUSSION

In our study, CD revealed higher false negative rate probably due to forceful injection of contrast materials resulting transient recanalization of nasolacrimal duct. In comparison with CD, LDS shows natural status of lacrimal pathway although it has less satisfactory anatomic resolution than CD. Therefore, high symptom correlation of LDS was expected results. LDS is also advantageous because of little complications resulting from manual injection and trivial radiation exposure.

CONCLUSION

CD is more superior to LDS in the precise anatomic localization of the obstruction site. LDS shows higher clinical correlation and negative predictive value in comparison with CD. LDS seems to be useful as an initial diagnostic study in patients with epiphora, and subsequent CD is necessary before intervention of the nasolacrimal duct.