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Dear Lindsey

Thank you for asking me to prepare a supplementary report relating to Rev David Black. We discussed his case by teleconference the other day.

The first document is from the Histology Department at Stirling Royal Infirmary. This is the post-mortem report for David Black. There were no unexpected observations made at post-mortem. Of course, the principal abnormality related to the alimentary system. The liver was replaced with nodules of tumour varying in size between 3 mm and 15 mm. The background liver was noted to be fibrotic. I can see no evidence of liver cancer outside the liver. The microscopic examination confirmed the presence of multifocal hepatocellular carcinoma. The background liver was confirmed to be cirrhotic. All of this was known before death. Thus, it confirms that the patient had cirrhosis of the graft and there was extensive primary liver cancer. It cannot be stated from this evidence whether the cancer represented recurrent cancer or *de novo* cancer in the graft. Further examination might help to clarify that. You might make enquiries with UK Transplant to see if the liver donor was male or female. If the donor liver was female and the hepatocellular carcinoma was recurrent (rather than de novo), then in situ techniques might be able to demonstrate the gender of the tumour. In other words, a technique such as florescent in situ hybridisation for the Y chromosome might demonstrate that the cancer was of recipient rather than donor origin. You might like to discuss this possibility with the Pathologist at Stirling Royal Infirmary.

I have also examined the histology reports from the Pathology Directorate at Royal Infirmary of Edinburgh. This includes the macroscopic and microscopic examination of the explanted liver. It confirms that there was fairly extensive primary liver cancer at the time of liver transplantation.

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The microscopic report defined at least five nodules in the left lobe and three tumours in the right lobe. The largest tumour measured 4 x 3 x 3 cm in diameter. There was no evidence of spread outside the liver. Some lymph nodes were examined and showed no evidence of tumour.

We know that the risk of recurrent cancer is proportional to the number of tumours and to the diameter of the largest tumour. Therefore, recurrence of cancer post transplant would have been a significant possibility. It would have been appropriate to share this information with the patient. The absence of tumour in regional lymph nodes does not exclude the subsequent possibility of tumour recurrence.

There is no way of preventing recurrence of liver cancer. Once recurrence has occurred, there is no treatment of proven benefit for the patient. Attitudes concerning surveillance for recurrent cancer will differ between units. Some units will have a protocol for surveillance post transplant. Probably, those surveillance programmes lead to earlier identification of cancer in those cases that recur. Isolated cases might possibly benefit from early diagnosis. Occasional cases may appear suitable for surgical resection. However, in the vast majority of cases, recurrent cancer is a widespread disease and surgical treatment is not likely to be of benefit. In 1996, the majority of Liver Units would not have undertaken any post-transplant surveillance. Certainly, at that time, it was not our practice in Birmingham to undertake routine post-transplant surveillance. To this day, it is not our practice to undertake surveillance. Occasional patients request some sort of surveillance. Under that circumstance, we are happy to oblige though we advise the patient that early detection is unlikely to be associated with any survival advantage.

The majority of recurrent cancers are evident within two years of transplantation. Occasional recurrences are seen later than that and as late as five years. It is possible that recurrence can occur seven years post-transplant. However, as stated previously, the Reverend Black's cancer in the transplanted liver might represent new liver cancer. Further examination might help to clarify that.

Yours sincerely

AUTHORISED
BUT NOT
SIGNED

Dr David Mutimer
Consultant in Liver Medicine