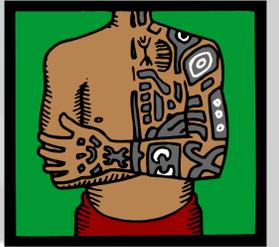


IDENTIFICATION OF BURN VICTIMS THROUGH TATTOOS



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Introduction

Using Infrared, Ultraviolet and spotlight techniques, these light sources were used to enhance tattoos that were present on skin that was previously burned. Using pig skin as a model of human skin, tattoos were professionally drawn on the skin in 3 different coloured inks (red, green, black). The burns were then created by using a hand held blow torch and the skin was burned to either first, second or third degree by varying the exposure to the blow torch from between 8 seconds to 90 seconds.

Materials and Methods

Of the three pieces of pork to be tattooed, two pieces were tattooed with the words MUM, AND, DAD. The third was tattooed with MUM, DAD and a HEART shape using an electric tattoo machine. All were burned from a distance of 25cm and placed under the different light sources of the video spectral comparator and analysed. The results have been concluded below.



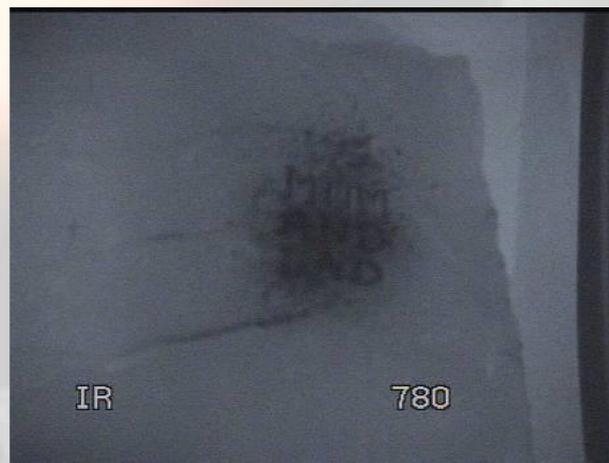
Tattoo on pig skin during burning (1st degree)



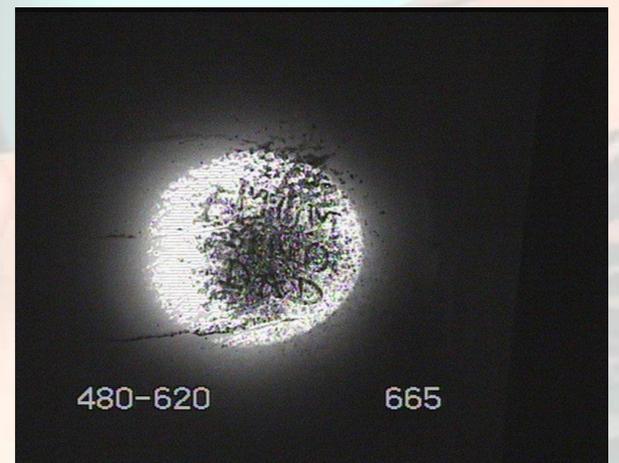
Second degree burn under Visible Light



Third degree burns under visible light



Third degree burn under Infra-red at 780



Third degree burn under Spotlight 480-620 at 665

Conclusion

The tattoos from the skin burned to a 'first' or 'second degree' burn could be seen visually, but the alternative light sources clearly make them more visible. The tattoos from the skin burned to a 'third degree burn' could not be seen visually, but were enhanced considerably by the light sources, in particular the spotlight technique, which also *reduced* the amount of scorching that could be seen. Each lighting technique had an 'optimum range' of visibility. Further investigation is warranted to examine the practicality of use of alternative light sources on tattoos of fire victims in order that tattoos could be used as an identifying feature.

