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ORIGINAL ARTICLE

An audit of healthcare professionals' knowledge regarding perinatal autopsy

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Abstract

Background Perinatal autopsy is one the most valuable investigations to ascertain the cause of death (Nijkamp et al., Seminars in Fetal & Neonatal Medicine. 22:167-175, 2017; Korteweg et al., AJOG 53, e1-12, 2012; Late Interuterine Death and Stillbirth' RCOG Green-top Guideline No.55, 2015). Discussions about perinatal autopsy can be difficult for parents and healthcare professionals. Perinatal staff need a good level of knowledge and understanding regarding perinatal autopsy in order to discuss the procedure with parents. This study aims to investigate healthcare professionals' knowledge regarding perinatal autopsy.

Methods An audit conducted in a large teaching hospital using a questionnaire was developed and distributed to healthcare professionals in the hospital.

Results Seventy healthcare professionals participated in the audit. Of those surveyed, 64% ($n = 45$) have discussed perinatal autopsy with a mother and the majority of healthcare professionals (67%) found this difficult. Self-reported levels of understanding were found to be low with just 10% reporting 'excellent understanding'.

Conclusions The results of this audit highlight the need for further education among all healthcare professionals working with bereaved families.

Keywords Autopsy · Perinatal death · Post-mortem · Stillbirth

Introduction

Perinatal death is a devastating experience for parents and the desire to know what happened is strong among parents and healthcare professionals alike [1]. Perinatal autopsy, along with placental examination, is the most valuable investigation to ascertain the cause of death [1–3]. The most valuable investigations following fetal death for establishing the cause of death has been found to be placental examination in 95.7% of cases, autopsy in 72.6% of cases and cytogenetic analysis in 29% of cases [3].

Conversations about perinatal autopsy can be difficult for both the parents and their healthcare professional [4, 5]. Healthcare professionals need to be prepared for these difficult conversations [5]. Parent's decision-making regarding perinatal autopsy is often greatly influenced by the information received from healthcare professionals [6, 7]. The literature reports that parents do not always receive enough information about perinatal autopsy [4, 8]. Further, upset and confusion can be caused to parents if inaccurate or incomplete information regarding autopsy is given. It is recommended that parents receive accurate information delivered in a sensitive manner [9, 10].

Barriers to consenting to autopsy include lack of knowledge about the procedure among healthcare professionals [7, 11]. In order to provide accurate information to parents, healthcare professionals need to have a good understanding of the policies and procedures regarding autopsy. The literature highlights the need for further education for healthcare professionals regarding perinatal autopsy [4, 7, 8]. The HSE 'National Standards for Bereavement Care Following Pregnancy Loss and Perinatal Death' recommends that all healthcare professionals working with bereaved parents are educated regarding autopsy [10]. This study aims to assess healthcare professional's knowledge regarding perinatal autopsy. The knowledge gained from this study will be then used to

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Table 1 Healthcare professionals' role

Total number	$N = 70$
Consultants (neonatologist or obstetrician)	$N = 10$, 14%
Non-consultant doctors (neonates or obstetrics)	$N = 23$, 33%
Midwives	$N = 26$, 38%
Nurses (gynaecology or neonates)	$N = 8$, 11%
Other healthcare professionals	$N = 3$, 4%

develop targeted education interventions for healthcare professionals working in the area.

This study aimed to audit healthcare professionals' knowledge regarding perinatal autopsy to develop tailored education programs for professionals working with families who have experienced perinatal death.

Methods

An audit to ascertain staff knowledge of perinatal autopsy was conducted in a large teaching hospital. A questionnaire was developed and distributed to perinatal staff in one hospital. The questionnaire was developed by a perinatal pathologist and a bereavement midwife specialist following a literature review. Permission was granted for the audit by the executive management team. Participation was anonymous and completely voluntary. Anonymised data was then entered into SPSS V.24 for analysis. Descriptive analysis was carried out using frequencies, means and variation as appropriate.

Results

Seventy healthcare professionals participated. The demographics of the participants are shown in Table 1, professions. The majority of perinatal professional staff surveyed has talked to a mother about perinatal loss (86%), and of these, 75% found this difficult. Of those surveyed, 64% ($n = 45$) have discussed perinatal autopsy with a mother and the majority of these healthcare professionals (67% of those who have spoken about autopsy) found this difficult.

The majority of professionals in this study (74%, $n = 52$) rated their understanding of perinatal autopsy as 'some understanding', 10% felt they have 'excellent understanding', and 16% have 'very little understanding'. Of the consultants surveyed, 50% felt they had an excellent understanding of perinatal autopsy compared to 3% of nurses and midwives and 4% of non-consultant doctors (see Table 2). Seventy-three percent of healthcare professionals surveyed had never seen and post-mortem being performed. One midwife expressed an interested in observing a post-mortem. Ten participants wrote comments on the survey, of these, seven participants requested further education or report a lack of knowledge regarding perinatal autopsy.

In the hospital where the audit took place, organs are virtually never retained following autopsy and 56% ($n = 39$) of participants were aware of this. However, 16% ($n = 11$) of health professionals surveyed did not know how often organs were retained.

All participants correctly identified that a pathologist performs a perinatal autopsy. When asked how long an autopsy takes to perform responses varied. Time for completing an autopsy ranged from 1 h to 1 week. Just 24% of participants correctly stated that autopsies are performed over 1–2 days.

The time taken to receive a final report from an autopsy also varied, with responses ranging from 3 days to 6 months. Thirty-six percent ($n = 25$) correctly stated that the report takes 6–8 weeks to be completed.

All participants were aware that a baby could be viewed before autopsy. Eighty-four percent ($n = 59$) stated that a baby could be viewed after an autopsy with two participants acknowledging that this depends on the gestation of the baby. Two participants (3%) did not know if a baby could be viewed after an autopsy and nine (13%) stated that a baby could not be viewed after an autopsy. In the majority of cases, a baby born weighing over 500 g can be viewed after an autopsy.

Healthcare professionals' knowledge of the gestational age that autopsy can be performed from varied from 12 to 28 weeks. In the hospital, concerned autopsy can be performed from 16 weeks gestation. Eight participants (11%) did not know the gestational age that autopsies can be performed from. Forty-three percent ($n = 30$) of participants believe that autopsy can only be performed after 20 weeks.

Table 2 Self-reported level of understanding regarding perinatal autopsy

How would you rate your understanding regarding autopsy	Very little understanding	Some understanding	Excellent understanding
Overall $N = 70$	$N = 11$, 16%	$N = 52$, 74%	$N = 7$, 10%
Consultants (neonates or obstetrics) $N = 10$	$N = 0$	$N = 5$, 50%	$N = 5$, 50%
Non-consultant doctors (neonates or obstetrics) $N = 23$	$N = 2$ 9%%	$N = 20$, 87%	$N = 1$, 4%
Nurse and midwives $N = 34$	$N = 9$ 26%	$N = 24$, 71%	$N = 1$, 3%
Other healthcare professionals $N = 3$	$N = 0$	$N = 3$, 100%	$N = 0$

Sixty percent of participants were able to identify alternatives to autopsy. The most common alternatives suggested were radiology (MRI or X-ray) ($n = 26$, 37%), genetic tests ($n = 16$, 23%), and placental histology ($n = 12$, 17%). Seven percent ($n = 5$) stated that there is no alternative to autopsy (see Table 3).

Discussion

In order to support parents to make an informed decision regarding perinatal autopsy, healthcare professionals need a good level of knowledge and understanding of the procedure. Parents value accurate information, that is, delivered in a sensitive manner.

The majority (67%) of professionals who have discussed perinatal autopsy with parents found this difficult. This finding is mirrored in the literature, with a number of studies reporting that staff struggle when discussing perinatal autopsy with parents [4]. Lack of confidence, experience, and training has all been reported in previous studies as issues in relation to discussing this difficult topic [4]. Participants in this audit also requested further education in this area. All non-consultant doctors are provided with a brief educational session upon commencing employment in the hospital, this has been the practice for the past 15 years. Consultant neonatologists, obstetricians, and midwives are also offered one-to-one or group education session. Midwives and nurses are also offered education regarding perinatal autopsy at an annual bereavement study day. The result of this audit is supported by previous studies [4, 10] in highlighting the need for further education among all staff working with bereaved families. Following the completion of this audit, education sessions have been arranged for key healthcare professionals to clarify the procedure for perinatal autopsy. Further educational sessions are planned which will be tailored to meet the knowledge gaps identified in this audit.

Autopsy consent is more likely to be obtained when a senior member of staff carries out the counselling of families [11]. ISANDS advise that discussions regarding perinatal autopsy are not delegated to less experienced staff [9]. Given the low levels of self-reported understanding regarding perinatal autopsy among non-consultant doctors (4% report an excellent understanding), it is advisable that consultant obstetricians or paediatricians or specialist bereavement midwives carry out discussion about autopsy with parents [11, 12]. Levels of understanding of perinatal autopsy among bereavement specialist midwives was not explored in this study, this is an area for potential future research.

Table 3 Alternatives to autopsy

Do not know or no response	$N = 23$, 33%
Some alternative suggested	$N = 42$, 60%
No alternative	$N = 5$, 7%
Alternatives suggested	
Radiology	$N = 26$, 37%
Genetic test	$N = 16$, 23%
Placental histology	$N = 12$, 17%
External examination or inspection	$N = 11$, 15%
Maternal blood tests	$N = 4$, 6%
Gender ID	$N = 4$, 6%
Photos	$N = 3$, 4%

Compliance with ethical standards

Ethics statement All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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