Audit of Perinatal Pathology Autopsy turn around times (TAT)

Audit of Dr. Kelehan perinatal autopsy turn around times during my post semi-retirement practice from 2009 to 2022 to date.

Dr. Peter Kelehan

Background

Current perinatal practice guidelines recommend that parents should be offered a full postmortem examination of their Stillborn Baby to help explain the cause of death. When a cause is found it can crucially influence care in the next pregnancy.

A perinatal autopsy is a complex and time consuming operation, as much for the histopathology laboratory team as it is for the pathologist. There are many steps and bottle-necks before a final report is typed, checked, and sent to the regional hospital laboratory office for incorporation in their differing lab systems, report authorised, and sent to the maternity unit.

An essential component is the selection of suitably trimmed tissue samples for adequate fixation, blocking out tissue pieces in suitable cassettes for a further period of fixation and transport for histological processing. Following overnight processing, transfer and orientation of the tissue samples for paraffin embedding in histology blocks, microtome section cutting and histological staining of the slides. In a busy histopathology laboratory this will take second place, and rightly so, to the priority of diagnostic surgical pathology for living patients. In the optimum situation, working in a single well-staffed and resourced laboratory, it is envisaged that 80% of reports should be issued by 3 months. Some will take longer because of complexity of case and/or inclusion of Neuropathology or Genetic/Metabolic reports.

Methods

Sample: 550 babies from the Four Provinces.
Exclusion criteria:

- Neonatal deaths
- Mid-trimester pregnancy losses
- Post-neonatal deaths
- Sudden unexpected deaths in infancy
- Child deaths and maternal deaths.

Inclusion criteria:

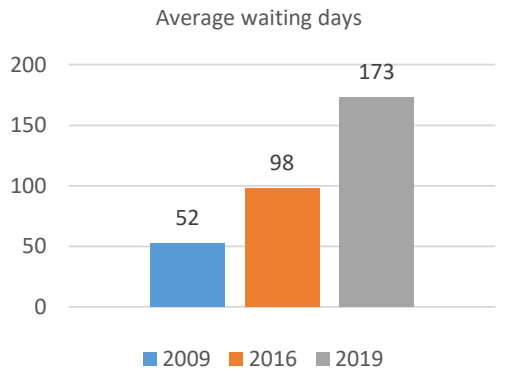
- Selected stillborn infants from 2009, 2016 and 2019.
- Availability of dated final autopsy report from the laboratory office of the regional hospital serving the maternity hospital of baby's birth.
- Both coroner and consented post-mortems.

In this audit:

- For 2009 (total 24 autopsies- 11 stillbirth reports selected), the majority of the postmortems and the processing took place in one hospital laboratory service, supporting 2 local maternity units.
- For 2016 (total 68 autopsies- 11 stillbirth reports selected), approximately half the number of autopsies were done in one non-maternity Dublin hospital and half done in a regional hospital supporting the maternity service. All processing was in the regional hospital laboratories.
- For 2019 (total 57 autopsies-12 stillbirth reports selected), the majority of postmortems were done in the non-maternity Dublin hospital and all processing was in the regional hospitals.

Findings and recommendations

Year	Stillbirth cases selected	Range	Average waiting days	Median
2009	11	28-85	52	50
2016	11	48-187	98	91
2019	12	48-298	173	178



The reason for the depressingly large increase in turnaround times, over the years, is that the provision of a readily available specialist perinatal and paediatric autopsy service to the regional hospitals produced an increased number of autopsies causing a heavy load on the supporting but unsupported histopathology laboratory staff. This produced a delay in the availability of histology slides, essential for final diagnosis. Long delays are most distressing for the grieving parents.

- A supra-regional specialist service needs suitable supportive staff and a full team approach.
- A coordinator is a very important member of the team, and in a small country like ours, the post can be shared, with an on call capability between 2 or 3 part time office administrators, communicating with all maternity units, the pathologists, the undertakers and the laboratories. The coordinator could help the pathologists work in many ways, including the collection of ancillary data from outside sources, and reminding the pathologist of mislaid, unfinished or forgotten items of work.
- Communicating with the parents via bereavement midwife and post-natal ward midwifery staff is of paramount importance.
- Co-ordinated supra-regional paediatric/perinatal autopsy services should share an 'on call' capability to allow for autopsy at weekend or public holiday. They may also provide monthly Perinatal Mortality Conference to all regional units.
- Provision of paediatric neuropathology by the supra-regional network, particularly through the availability of special techniques of preservation, fixation and histological staining, together with the research activity generated, may provide mechanisms and answers to the questions. The network can also provide via ancillary services: Radiology imaging, and metabolic and genetic capabilities.
- A co-operative supra-regional service can also support the development of minimal incision and minimal invasive full and complete autopsy more acceptable to the grieving parents.