



OFFICE OF THE STATE CORONER

FINDINGS OF INQUEST

CITATION: **Inquest into the death of Kristen Kerkvliet**

TITLE OF COURT: Coroner's Court

JURISDICTION: Gympie

FILE NO(s): COR 2006/56

DELIVERED ON: 8 October 2009

DELIVERED AT: Gympie

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FINDINGS OF: Coroner Baldwin

CATCHWORDS: CORONERS: Inquest – Death of a child, Kawasaki's Disease, care in hospital

REPRESENTATION:

Counsel Assisting

Sgt JP Todman

Qld Health & staff of Gympie Hospital S Gallagher (TressCox Lawyers)

Dr Patrick Buxton J Cameron (Corrs Chambers Westgarth Lawyers)

Kristen was born on the 27th of November 2004 and was the much loved daughter of her parents Ashley and Catherine Kerkvliet. Tragically she died on the 4th of February 2006. On that day she had presented to her mother as being unwell and she had attended upon a local General Practitioner. The General Practitioner on being somewhat concerned about her condition referred her to the Gympie Hospital where she arrived at approximately 5.00pm on the 3rd of February 2006.

Upon arrival at the Gympie Hospital, Kristen was attended to by Doctor Christoph Clausen who was assisted by Doctor Tim Ryder. She was examined by both of these doctors and found to be severely underweight. Doctor Clausen indicated that when he saw Kristen it was apparent she was severely underweight and that she was breathing quickly but he noted she was smiling, happy and not crying although she had the appearance of being a little tired. Both doctors apparently listened to her heart and found her heart sounds normal but found her to be pale and breathing quickly so considered that she may have been suffering from severe anaemia and consequently blood tests were ordered. Some tests came back quickly and indicated that the child was anaemic but not severely anaemic enough to require urgent medical treatment such as a transfusion. She did not appear dehydrated and did not appear to have signs of an infection so a cannula was not inserted. Doctor Ryder continued to have the care of Kristen when Doctor Clausen left to finish his shift and there was approximately one hour until Doctor Buxton who was at that stage the hospital Acting Superintendent, was to commence his shift. In the interim Doctor Gabrielle Du Preez-Wilkinson took over her care. Doctor Buxton subsequently reviewed the tests that had previously been ordered and ordered further x-rays. Doctor Buxton reviewed these x-rays and subsequently had discussions with Doctor Hermiz from Nambour Hospital where it was agreed that an ambulance would transfer Kristen to the Nambour General Hospital following on from the management at the Gympie Hospital.

The ambulance to which I will return later was arranged and Kristen was considered to be a code 2C. As Kristen was being loaded into the ambulance it appeared that she suffered a cardiac arrest and was immediately returned back to the Gympie Hospital where resuscitation was attempted however it was unsuccessful and Kristen died at approximately 12.30am on the 4th day of June 2006. The main issues to be determined in relation to this inquest were firstly:

- 1) What was the cause of death?
- 2) Could Kristen's death have been prevented in the circumstances?
- 3) Are there any recommendations that may prevent further deaths similar to Kristen's?

I had before me a number of statements most notably the statements from the doctors including Doctor George Pienaar who was the initial treating General Practitioner, Doctor Christoph Clausen and Doctor Timothy Ryder who were the initial doctors to see Kristen at the Gympie General Hospital. Doctor Patrick Buxton, Doctor Gabrielle Du Preez-Wilkinson and Doctor Johan

Engelbrecht also supplied statements. All of these doctors were involved in Kristen's care at the hospital and were required to provide evidence. In addition, I also had the report of Doctor Nathan Milne who conducted the autopsy on Kristen on the 6th of February 2006 at the John Tonge Centre together with his autopsy report. In addition to this I also had a specialist's report in the form of an expert witness of Doctor Tom Hurley who is a specialist paediatrician who had reviewed the case. Doctor Milne was not required for cross-examination but Doctor Hurley gave evidence and was cross-examined. In addition I had a number of other statements of persons who had peripheral involvement and were not required for cross-examination. That is Nurse Joanne Hosking, Nurse Vicky Lee Morrison, Nurse Anne Bird and Nurse Karen Foxlee. As well as the nurses there were also two ambulance officers, Paul Derrick and Geoffery Langton. None of the nurses or ambulance officers were required to give evidence. Finally I also had statements from the parents, Catherine Alice Kerkvliet and Ashley Russell Kerkvliet. After the adjournment of the matter, further discussions were held, Catherine Kerkvliet did give evidence and was cross-examined in relation to her daughter's death. There were also a number of exhibits including the police report to the coroner, The Life Extinct Certificate, a report from the Gympie Child Protection and Investigation Unit of the Queensland Police Service, the medical notes of the emergency department at the Gympie Hospital and a report from the Department of Child Safety provided to police officer Greg Davey. I was also provided with a road ambulance ordering guide referred to as Q.I.F.T. Ordering Guide which reflected the priority order of the Queensland Ambulance Service.

I also had the original of the Gympie Hospital's complete chart and medical records of Kristen Kerkvliet.

Turning now to the first issue there can be no doubt that Kristen while developing normally was being attacked by a silent killer. Her young body as it appears had been attacked by Kawasaki's Disease. Turning to page 13 of Doctor Milne's report I quote as follows:

"Kawasaki's Disease is an acute febrile illness of childhood. The cause is unknown but a reaction to an infection is suspected. It typically affects children aged 6 months to 5 years but most commonly from the age 9 to 11 months. It is more common in males and oriental children but can affect Caucasian females. The typical clinical symptoms include fever, red eyes, red and cracked lips, swollen throat, red and swollen hands and feet, a red rash, an enlargement of lymph nodes. The disease typically evolves in four stages over a couple of months. Acute febrile, sub-acute, convalescent and heal. Death usually occurs within six months of the onset of the symptoms but may occur at any stage including years later."

Doctor Milne went on to say:

"Kawasaki's Disease is an inflammatory disease of blood vessels (vasculitis). This inflammation may involve arteries throughout the body but involvement of the coronary artery is most significant. As the disease progresses the arteries

become scarred and narrowed resulting in impaired blood supply to the heart muscle (myocardium).

Changes to the heart that can lead to death include myocardial infarction, myocardial inflammation (myocarditis) and abnormal electrical rhythm (arrhythmia) or rupture of a coronary artery due to aneurism formation.”

Doctor Milne who was not required for cross-examination opined that Kristen died of acute myocardial infarction secondary to the effects of Kawasaki's Disease. He pointed out that both malnutrition and bronchial pneumonia are other significant conditions and although they would not be the underlying cause of death they may well have contributed to it.

Doctor Hurley who was called as the expert witness concurred with the findings of Doctor Milne saying that he considered his findings “*a fair and true conclusion*”.

The only issues with the diagnosis of Kristen suffering Kawasaki's Disease was apparently the apparent absence of symptoms. Doctor Hurley had indicated in his report that a formal diagnosis of Kawasaki's Disease required the presence of fever lasting at least five days without any other explanation combined with four of the five other criteria. The other criteria being those mentioned in Doctor Milne's report being a rash, swollen lymph glands, conjunctivitis, flaking of the skin, swelling of the feet or hand.

Kristen's mother, Catherine Kerkvliet gave evidence of Kristen's short life. She gave evidence of her diet and her breastfeeding routine. Kristen continued to have five breastfeeds a day as well as three solid meals a day. She gave evidence that she had fruit such as bananas, melons, strawberries and double bread with various fruits for breakfast. She said that she would have for lunch a savoury vegetarian dish such as lasagne with grains or legumes with mixed vegetables. For dinner she would have similar vegetables and a savoury dish. In addition Mrs Kerkvliet gave evidence that she had been active and that Kristen had started moving around furniture at about eight to nine months and was walking around the age of twelve months. She said that her daughter was happy and playful and doing normal baby things and her sleeping patterns were good. She slept through the night having a morning and afternoon sleep for an hour or two. Under cross-examination from Mr Fitzpatrick in regard to the symptoms, Mrs Kerkvliet could not recall any of the symptoms as outlined as being necessary for the criteria. She gave evidence that she only recalled Kristen being grumpy at around Christmas time. She was at that time grumpy and irritable and seemed to be off her food and this is how she was on the day before her death when her mother took her to the doctor.

Upon being pressed in regard to the symptoms the only other recollection she could offer the court was that Kristen was born with a blocked tear duct and that as advised she had treated it with breast milk and it had cleared up.

This presented a difficulty for the diagnoses of Kawasaki's. Under cross-

examination Doctor Hurley however gave evidence that the younger the child is when the illness strikes the more subtle it can present. In fact he said: “so, *in children under six months of age it can even present simply as a fever but an essential diagnoses is a temperature over 38.5 for around five days or longer and usually associated with significant irritability. You may not have any of those associated signs...*”

Doctor Hurley went on to say that these types of presentations are very unusual and usually you get the group presentations but conceded that it may well have been that Kristen only displayed the temperature.

It was then put to him that for a young mother with her first child the mother may not have interpreted the fever for five days as anything more significant as teething or perhaps nappy rash fevers that are associated with common colds or other fevers. Doctor Hurley indicated that this was correct saying: “*That’s right. Misinterpretation of a temperature can be pretty easy.*”

It can therefore be concluded that Kristen did in fact suffer from Kawasaki’s Disease which had left her with serious residual damage to her heart which led to cardiac failure as a result of poor vascular blood supply to her heart which of course led to the death of her heart muscle.

The next issue to determine is whether Kristen’s death was preventable. As I have indicated earlier Kristen’s body was being attacked by a somewhat silent killer of Kawasaki’s Disease which had ravaged her little body causing damage to her heart muscles which ultimately led to her death. The associated symptoms of this were an obvious failure to thrive which was mostly reflected in her low weight. There can be no doubt that Kristen was seriously underweight and in the very low percentile for her age group weighing only 6.3kg at aged 14 months. However, given the evidence that Kristen’s mother gave to the court of her eating habits, her sleeping habits and her achieving her milestones, the fact that she was underweight did not give her mother any cause for concern as she had considered that she was simply a small child. It would be purely speculative to wonder if Kristen had been monitored more regularly by medical or maternal health persons whether her failure to continue to gain weight may have warranted further investigation and perhaps the discovery of the presence of the Kawasaki’s Disease. Given the circumstances that Kristen had not been to a medical practitioner as the evidence from the mother was that she had generally been a well child and there was no need for her to attend after her six week old check up when the child arrived at the general practitioner she was already in an advanced state of deterioration due to the damage caused by the Kawasaki’s Disease.

It was fairly clear that many of the doctors had little knowledge, if any, of the disease. The issue is whether anything, that is knowledge and understanding of the disease or treatment, could have prevented Kristen’s death once she had presented at Doctor Pienaar’s surgery. Doctor Pienaar gave evidence that he was most concerned about the baby’s welfare describing her as “*acutely sick*”. He said he was mostly concerned that she was pale and

appeared ill but that she was so underweight. He conceded that he had probably thought at the time that she was eighteen months old but even knowing she was fourteen months old she was still on the lowest percentile that effectively meant that none of the fourteen month old population would weigh less than her. He described her as cachectic which essentially meant that she was skin and bone. Upon her presentation to Gympie Hospital Kristen was also noted as being severely underweight. The examining Doctor, Doctor Clausen determined that she was chronically ill, believing that she had been ill for some time given her presentation. He did a routine examination of her, particularly in the light that she seemed to have some breathing irregularities and checked her heart for any obvious problems or heart murmur issues. This was also carried out with Doctor Ryder and neither doctor found anything in their routine examination to suggest any difficulties with the heart at that point. However because of her condition, tests were ordered including blood tests to ascertain the position particularly in relation to possible anaemia. I've already noted that no cannula was inserted as the child did not appear to be dehydrated or suffering from an infection and thus it was not considered that antibiotics would be necessary. Subsequently Doctor Buxton, the most senior doctor attended and received the results of some tests. Furthermore x-rays were then ordered by Doctor Buxton. Doctor Buxton, in the absence of a specialist radiology report reviewed the x-rays and found by his visual assessment that Kristen was suffering from pneumonia. Doctor Buxton indicated that he believed on review that Kristen's heart was probably enlarged but conceded that he did not appreciate how grossly enlarged it was. Doctor Buxton is obviously not a specialist radiologist and he gave evidence that looking at chest, lungs and hearts of infants is particularly difficult because the child's heart can appear relatively large within such a small frame. Doctor Buxton conceded that had he believed or become aware that there were cardiac problems with Kristen he would have arranged a transfer direct to Brisbane rather than Nambour. It is obvious however that had this been the case Kristen would not have arrived in Brisbane until 11.00 o'clock on the best case scenario. On cross-examination of Doctor Ryder who carried out a number of observations and worked with Doctor Clausen in managing the treatment of Kristen when she arrived at approximately 5.00 o'clock until Doctor Buxton took over at approximately 7.20pm noted there was nothing in the observations that were carried out to suggest that Kristen was critically ill or that she should be transferred immediately. He gave evidence that he believed that given the observations that he and Doctor Clausen had made and the fact that Doctor Buxton would soon be arriving to take over he felt it appropriate to wait for further diagnoses by the more senior Doctor Buxton. Dr Clausen gave evidence that he was extremely shocked to learn the next day of Kristen's death as there was nothing to suggest to him that she was critically ill.

Nonetheless, regardless of the observations, subsequent treatment and management of Kristen's condition by Doctor Clausen, Doctor Ryder and Doctor Buxton the evidence of the specialist paediatrician, Doctor Hurley was clear in respect of the limitations on treating a patient in Kristen's position.

Essentially Doctor Hurley's evidence was that Kristen was dire, in fact

hopeless was the word he used. His evidence which I accepted was that Kristen was presented post heart attack, that in fact she had many essential heart attacks or progressive cardiac death or heart muscle death over previous months to presentation. He indicated that had the hospital in Gympie been able to diagnose Kristen as a cardiac case then she could have been provided with medication to improve her heart's contractibility or the strength of the heart beats. He also indicated that she could have been given some direct cardiac medication and maybe a diuretic to help her pass fluid taking the strain off her heart and maybe provided with some oxygen. He also gave evidence that he would not have been able to provide more assistance or treatment than that and nor would the cardiac hospital short of the very remote possibility of an immediate transplant. It is clear that a patient in Kristen's position was almost too far gone for any medical assistance regardless of where the child ultimately presented. It was clear that Kristen's condition had happened some six months prior and during the ensuing six months she had become progressively worse in losing heart function and by the time she had presented, even with an immediate correct diagnosis there was little that could be done to save her. Accordingly I find that Kristen's death was not preventable given that she only presented for medical attention in the afternoon of the 3rd of February 2006 by which time there was little that could be done even if the diagnosis which was subsequently available through the autopsy had been available prior to her death.

The ambulance to which I referred to earlier was called under a code c which of course was questioned in the light of the system explained. Given the findings here and the demand for such services and the need for priority listing I can not say that the code should have been any different. Hindsight may well have suggested that Kristen should have been a higher priority but at the time the combined and individual opinions of the treating doctors would suggest it was appropriate.

Third and finally was whether anything could be recommended to prevent similar deaths in future. It is without doubt that had Kristen's failure to survive been noted and investigated the damage to her organs from Kawasaki's Disease may well have been treated and subsequently her death may have been prevented. It appears from the evidence before the court and the evidence that was before the doctors and in fact corroborated by the mother's evidence that Kristen in fact had developed normally until approximately six months old when she then failed to continue to gain weight and thrive. Although reaching many of her physical milestones her nutritional state was clearly very poor. Although she was enjoying good balanced nutritional meals in addition to breastfeeding she simply was not gaining weight and was severely malnourished at the time of her death.

I have come to the conclusion that the only way that Kristen's death may have been prevented would have been had her failure to thrive been picked up by medical professionals or maternal and child health professionals resulting in investigation as to the possible reasons why. At that point Kawasaki's Disease may have been detected and it may have been possible to address some of the symptoms and thus prevent Kristen going into cardiac arrest.

However this is pure speculation but it certainly does put the view that regular medical checkups for children particularly in the first year to eighteen months of their life can assist in detecting any potential problems such as failure to thrive which would warrant further investigation. The only way this death from Kawasaki's Disease complications could have been prevented had Kristen regularly attended doctors for checkups and then been alerted by the relevant professionals that indeed her malnourishment and underweight was not as a result of her being a small child but as a result of a far more serious sinister problem. While no blame can be attributed to the parents it would be hard to think of a greater case for regular medical checkups particularly in the first twelve months of life to ensure that the child is developing normally and that there is no reason to investigate any potential problems. Kristen Kerkvliet's death was tragic and no doubt heart wrenching for her parents. However in the circumstances it is clear that she had Kawasaki's Disease sometime around the age of six to eight months which had resulted in long term damage to her internal organs mostly the heart. As a result of this her heart muscles deteriorated and she failed to thrive. Ultimately by the time she was presented to the hospital at fourteen months old the damage had been done and the resulting cardiac arrest which took her young life was no longer preventable.

That is not to say that every child who presents with Kawasaki's disease is too far gone to prevent death and certainly the improvement which was clearly necessary appears from the evidence to be addressed. It is simply not possible to have specialists at every hospital in Queensland to review every case given the limitations of skills and financial resources. This of course forces the general practitioners to do their best without the assistance of specialist radiologists and paediatricians. I do find it unacceptable that in this modern age of technology that Kristen's x-rays were reviewed some three days after her death by the specialist radiologist. I am satisfied that Doctor Buxton's evidence of the use of technology to obtain expert assistance is now in place to assist in diagnosing conditions and formulating the best treatment. While it would not have assisted Kristen in this case it would in others by commencing treatment and arranging transport via ambulance or medivac depending on the specialist diagnosis.

Accordingly I can not make any specific recommendations in regard to Kristen's sad and tragic death.